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Informal Logic's Infinite Regress: Inference Through a Looking-Glass

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I argue against the skeptical epistemological view exemplified by the Groarkes that "*all* theories of informal argument must face the regress problem." It is true that in our theoretical representations of reasoning, infinite regresses of self-justification regularly and inadvertently arise with respect to each of the RSA criteria for argument cogency (the premises are to be relevant, sufficient, and acceptable). But they arise needlessly, by confusing an RSA criterion with argument content, usually premise material.

KEYWORDS: argument from analogy, associated conditional, dialectical tier, epistemic infinitism, inference claim, Lewis Carroll, RSA criteria, self-justifying arguments, vicious and benign regresses

1. INTRODUCTION

Michael Scriven, one of the founders of modern informal logic, appears to walk right into a trap that Lewis Carroll set 81 years earlier. Scriven says "*all* arguments depend upon the 'assumption' that you can get from their specific premises to their specific conclusions" (1976, p. 84). Carroll (1895) describes an infinite argumentative regress, which can be symbolized as follows (the arrow for 'if-then'), keeping interpretation to a minimum:

$A: (\forall x)(\forall y)(\forall z)(((x = z) \,\&\, (y = z)) \rightarrow (x = y))$
$B: (a = c) \,\&\, (b = c)$
$C: (A \,\&\, B) \rightarrow Z$
$D: (A \,\&\, B \,\&\, C) \rightarrow Z$
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∴ *Z:* $a = b$

The vertical margin dots represent an infinite series of recursive iterations in the manner of *C* and *D*. We may take the assumption to which Scriven refers (he also allows it can be regarded as a "missing premise") first as *C* for the argument explicitly composed of *A*, *B*, and *Z*; then as *D* for the argument explicitly composed of *A*, *B*, *C*, and *Z*; and so on.

In informal logic's representations of reasoning, infinite regress often lurks. In many cases, the regress goes unnoticed. Yet in some cases, the regress is noticed, and an explanation and uneasy embrace are offered. For instance, Leo and Louis Groarke maintain that "*all* theories of informal argument must face the regress problem" (2002, p. 52). They locate the source of the problem in skeptical epistemology, specifically, in the fact that any reason given for a claim can itself be subjected to Sextus Empiricus' or the Tortoise's (in Carroll's tale) or your child's interminable game of 'Why?' The Groarke view is that it is only pragmatic "considerations of utility which must bring" these regresses to an end (p. 56). The main thesis of this paper is that such an approach to the regress problem is not only defeatist and excusing, it is misguided, because vigilance against representing arguments as *self-justifying* has the power to avert the infinite regress problem. Moreover, what this does not solve of the regress problem, is addressed by the theory of *epistemic infinitism*.

An organizing principle of this paper will be Johnson & Blair's (1977) widely utilized RSA criteria for argument cogency: the premises are to be relevant, sufficient, and acceptable. Similarly, for example, Govier (2010, p. 87ff.) advocates ARG "conditions of argument cogency": the premises are to be acceptable and relevant, and provide good grounds for the conclusion. One-by-one in the next three sections (2, 3, and 4) we will see that infinite regresses of self-justification arise with respect to each node of this triad. They arise by confusing a criterion of argument evaluation with argument content, usually premise material. This is a species of confusing the external with the internal, since as a standard for assessing arguments, a criterion of argument evaluation is external to any argument. Lastly, section 5 will consider the illumination that the theory of epistemic infinitism can shed. Section 2 will also discuss the difference between vicious and benign infinite series.

2. RELEVANCE AND VICIOUSNESS

Consider what is often cited as the form of argument from analogy: Premises: *X* and *Y* have certain properties in common; *X* has some further property. Conclusion: *Y* has the further property as well. Some find this structure incomplete because of a concern that having the first properties in common might not have anything to do with having the further property in common. They therefore add a premise schema to the effect that having the first properties in common "is relevant to having" the further property in common (Waller, 2001, p. 202; cf., e.g., Walton, Reed, & Macagno, 2008, p. 86).

But this addition is ill-advised, as some appear to see. For example, Guarini (2004, p. 163) says with respect to the structure he thinks analogical arguments exhibit: "I have not included the claim that the features cited in analogical arguments are relevant", although his critics insist the features cited "must be referring to *relevant* similarities and not *mere* similarities. Just so. However, it does not follow that the argument reconstruction must include a relevance claim". Even leaving aside the extent to which Guarini's concession would make all analogical arguments good arguments, his reply is of course weak. He attempts to strengthen it as follows:

> …there may be a general account available for why we do not include relevance claims in argument reconstruction. One of the background conditions guiding sincere argumentative discourse is that arguers are trying to make claims that are relevant to their conclusions. As a general rule, we do not include the background conditions for discourse as premises in argument reconstruction…

Yet this still does not go far enough, for it would make relevance a mere *pragmatic* condition of "sincere argumentative discourse", when in fact it has a critical logical role. The relevance of the premises to the conclusion is itself a general criterion of argument appraisal, as in the RSA criteria for argument cogency. Nothing is gained and much is risked by having an argument affirm its own quality (on any parameter), in effect 'patting itself on the back'; similarly, naming a store chain "Best Buy" does not make it so. If argument from analogy (or any scheme) is construed (per above) as *incomplete* without such a relevance premise, an infinite regress of self-justifications appears to be generated. For if the original argument is incomplete, then on the same grounds a second premise would be needed to affirm the relevance of the first premise claiming

relevance, and a third premise needed to affirm the relevance of the second premise claiming relevance, and so on without end.

The solution to this problem is not to postulate a relevance premise as part of an argument's structure in the first place. Relevance has an explanatory role as a general criterion of argument appraisal. Its presence helps to explain what makes an argument good; its absence helps to explain what makes an argument bad. It is confusion to take relevance as premise material.

This helps to elucidate why the regress is vicious, as even the name *regress* suggests: Any alleged *progress* made in explaining or accounting for anything completely disappears in the infinite structure for argument from analogy—a chimera made all the more implausible because argument from analogy is nondeductive (see section 4). As an example for comparison, take the question—what makes an act voluntary? You might theorize that an act is voluntary only if it is the result of an act of will. Of course for this to work, however, the act of will itself must be voluntary. So now the question is—what makes an act of will voluntary? Rosenberg argues (1984, p. 62) that "the only course open to us is to apply the theory again. When we do so, however, all we find is that we need yet another *voluntary* act of will. The question does not go away". These cases illustrate Olson's conclusion (1987, p. 50) that "strictly speaking, the only vicious regress is a regress of explication…and is thus hardly to be distinguished from circularity". In contrast, no such point applies to a benign infinite series, for instance, the fact that every counting (or natural) number has exactly one successor counting number. This series enhances our understanding; it accurately depicts, rather than bloats, ontology. Now Aristotle and other ancients held that there cannot be an actual infinity because that would paradoxically involve an infinite set of things that is somehow a completed totality. Modern mathematicians and others have no such scruples, as with various sets of numbers (naturals, irrationals, reals, etc.) and the infinite divisibility of continua, not to mention infinities of different sizes (cardinalities). Clark (1988, p. 369ff.) thinks that the only vicious infinite regress arguments are philosophical arguments, yet there is no formal pattern that they all exhibit. A sensible comprehensive perspective is offered by Nolan (2001). He argues that the ancient view still has much intuitive appeal because we are naturally inclined to parsimony in the postulation of entities, hence the notion of Ockham's razor. He maintains (pp. 536-537) that the boundary between the vicious and the benign

> might well be this: a regress is taken to be benign when the quantitative extravagance is a cost worth paying, and vicious

> when either the quantitative extravagance is not a cost worth paying, or if it has some more serious fault of which the regress is evidence (like lurking contradiction or failure as a reductive analysis).

Certainly, quantitative extravagance combined with a lack of explanatory power is a cost not worth paying, and that is what marks informal logic's infinite regress.

Up to this point, the argument pattern that this section has focused on is analogical argument. However, as we know, the local can spread globally. In this vein, consider Hitchcock's contention that "the word 'so' when used inferentially implies, as part of its meaning and not as some pragmatic implicature of its ordinary use, that the statement preceding it is relevant to the statement following it" (2011, p. 214; cf. his 2007, p. 4). He intends his contention to apply, *mutatis mutandis*, to any argument-indicator term, whether it introduces a conclusion as 'so' does, or introduces a premise, e.g., 'since' (2007, p. 1). Hitchcock's point is that such a term "implies" a proposition about relevance as part of its semantic content; the proposition is a positive meta-level comment about the argument's quality on the relevance parameter. As far as I can see, the only reason he gives for maintaining this is that an example such as "'snow is white, so grass is green' is not a good argument" because it has "an obviously irrelevant premise" (2007, p. 4; 2011, p. 213). In a manner parallel to what we saw specifically for analogical argument, this just seems to confuse a general criterion of argument appraisal (relevance) with argument content, opening the path of a (vicious) infinite regress of self-justifications—what ensures the relevance of the relevance claim made by the argument-indicator term (etc.)? Furthermore, because Hitchcock's view does not simply introduce wayward premise material, but pertains to the inferential relation *per se* of any argument (since an argument-indicator term is always at least implicit), it apparently has the bizarre consequence that one cannot both *use language correctly* and construct an argument that is bad with respect to the relevance of the premises to the conclusion. Were it only that all we had to do for our arguments to be cogent is to speak 'the Queen's English'.

3. ACCEPTABILITY

In her treatment of presumptions, Bermejo-Luque (2013, p. 1) says that in "monological argumentation, presumptions somehow dispense arguers from providing further reasons for some of their claims, and this seems to be necessary if their arguments are to stop at some point". Yet

exactly how might presumptions do this? I believe she is answering this question in proposing "the following definition: *a presumption is the speech-act of putting forward a proposition as a reasonable assumption*" (p. 4; cf. 2016, p. 9). But this view has some implications that are seemingly absurd. If I am a sincere arguer, and not engaged in suppositional reasoning (or indirect or conditional proof), what premises would I *not* 'put forward as (at least?) reasonable assumptions'? Given a sincerity condition, all premises or assumptions of standard arguments would appear to be presumptions.

Bermejo-Luque further explains that "in presuming that *p*, we are saying that it is reasonable to assume that *p*" (2013, p. 5); we "contend-that-it-is reasonable—in some particular sense—to assume that *p*" (2016, p. 10). This "saying" or 'contending' is semantic content that introduces a further proposition that is a meta-level comment on assumption *p*. This looks like a vicious infinite regress. If in presuming that *p* we are saying (*p′*) that it is reasonable to assume that *p*, then on the same grounds are we also saying (*p″*) that it is reasonable to assume that *p′* (i.e., that it is reasonable to assume that it is reasonable to assume that *p*) and (*p‴*) that it is reasonable to assume that *p″*…? It is hard to see any explanatory power justifying this quantitative extravagance.

To say of an assumption that it is reasonable seems to be saying that it is acceptable. Bermejo-Luque holds that "in most contexts" reasonability is epistemic in that true belief is the "pursued end" (2016, pp. 11-12). But premise acceptability in this sense is itself a general criterion of argument evaluation, as in the RSA criteria for argument cogency. Thus, on Bermejo-Luque's view, it looks like in virtue of making a presumption, at least in "most contexts" an argument affirms its own quality on the premise-acceptability parameter for that presumption. Yet if an argument needs to do this, then likewise it would need to ensure the acceptability of this first-level affirmation of acceptability by a second-level affirmation of the acceptability of the first-level one, and so on endlessly. The generality of this regress of self-justifications is clearer if you recall (above) that all premises or assumptions of standard arguments would appear to be presumptions on Bermejo-Luque's view, given a sincerity condition.

4. SUFFICIENCY

The most common view to be considered arises with respect to the RSA sufficiency criterion for argument cogency. We saw Scriven express the view at the outset of this paper. Perhaps the most succinct contemporary expression is Groarke & Groarke's (2002, p. 51): "Every argument assumes that the premises warrant the conclusion". Others who hold this view include Govier (1987, p. 96), Grennan (1994, p. 187), and Hitchcock (1998, p. 19). Hitchcock (2007, p. 2; 2011, p. 210) sees the idea as going back to the ancient Stoic logicians, specifically, Diogenes Laertius, who says that the argument-indicator term 'since' appearing at the beginning of a sentence "guarantees both that the second thing follows from the first and that the first is really a fact" (VII.71)[1]. Alternatively, the idea is sometimes cast in terms of the arguer, rather than the argument, making the assumption or "inference claim". For example, Hitchcock (2011, p. 86) maintains, with respect to argumentation inferences, that "the arguer implicitly claims that the conclusion of each constituent argument follows from the reason or reasons from which it is drawn".

Cast either way, the point is apparently supposed to be obvious, because it is usually not otherwise defended. Bermejo-Luque is an exception. She says that it is because an "implicit inference-claim can be attributed to us…that a mere transition from a cognitive input to a cognitive output counts as an act of reasoning, and merely putting forward a couple of claims counts as an act of arguing" (2011, p. 90). Whatever its defence or lack thereof, the view has become entrenched in informal logic to the point where it sometimes even seems to be regarded as a matter of descriptive definition rather than theory. Grennan says (1997, p. 69): "Consider an argument utterance symbolized as '*A*, so *B*'. By definition, the inference claim is 'if *A* then *B*'". Grennan goes on to say that if we "add" this claim to the argument "in an attempt to make the inference claim explicit", then the argument's form evidently will be that of Modus Ponens. As if by magic, notice, what might have been a deductively invalid argument (e.g., where *A* is true and *B* is false) becomes valid.[2] Yet this new argument's inference claim is "if *A* and if *A* then *B*, then

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[1] Retrieved from http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0258%3Abook%3D7%3Achapter%3D1, last accessed 22. 02. 2018.

[2] Grennan himself does not discuss this point. Hitchcock, inexplicably as far as I can see, expresses a denial of it: adding the "material conditional with the conjunction of the explicit premisses as antecedent and the conclusion as

B", and when this is added to the new argument for the same reason—making the inference claim explicit—an expanded argument and corresponding inference claim is generated, and so on, ad infinitum. In company with others, Grennan thinks that the way to stop this regress, which is akin to the one identified by Lewis Carroll, is simply to neither treat the original assumption/inference claim as a premise nor make it explicit (cf., e.g., Govier, 1987, pp. 96-97; Bermejo-Luque, 2004, pp. 174-175).[3]

But it is hard to see what an assumption of an argument is if not a premise, and it is hard to see what relevant difference it could make whether the claim is explicit or implicit. Rather, it seems to me that it is again taking situated reasoning to warrant itself—whether enthymematically or not—that is the problem. Arguments make no such assumption or inference claim as that the premises support the conclusion. Instead, in an argument the conclusion is actually inferred from the premises (some of which may be implicit); it is not claimed to be inferable. The use of an argument-indicator term such as 'so', 'therefore', or 'since' means that the arguer is inferring; contra (e.g.) Grennan (1997, pp. 69-70), they do not mean that the arguer or argument is making a meta-claim that, if true, would warrant this inference (the meta-claim being that the premises support the conclusion).[4] There is only the inference, and if the argument is cogent, the implication relation between the premises and the conclusion. It is not because an '*inference-claim* can be attributed to us' but rather it is because an *inference* can be attributed to us "that a mere transition from a cognitive input to a cognitive output counts as an act of reasoning, and merely putting forward a couple of claims counts as an act of arguing". There is nothing for such an inference claim to do (well, except cause trouble); it has no explanatory value. Furthermore, neither arguments nor inferences have a truth-value; rather, they are valid or invalid, or cogent or not. Hence, the view that we

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consequent…as an extra premiss does not make any previously invalid argument valid" (1999, p. 9-10).

[3]Notice that this is a different point than the idea that the way to avoid a Carroll-type regress is not to treat rules of inference as premises, which many have held, beginning at least with Russell (1937, pp. 35-36) and Ryle (1950, pp. 306-307). The assumption/inference claim referred to in the Groarke & Groarke dictum "every argument assumes that the premises warrant the conclusion" is not a rule of inference or a generalization about rules of inference.

[4]In contrast, a phrase on the order of 'it follows that…' of course does make the meta-claim that the premises support the conclusion. Could the existence of such phrases be the source of the confusion?

make an inference claim simply by arguing or inferring represents us as doing something we are not doing—making a claim that is true or false.

None of this is to deny that, by abstraction (as opposed to any act on the part of the arguer), every argument has an 'associated' or 'corresponding' conditional, in which the antecedent is the conjunction of the argument's premises and the consequent is the argument's conclusion (e.g., *C* for the argument *A*-*B*-*Z* at the beginning of this paper). We might even propose that the arguer is 'committed' to this conditional insofar as it would be inconsistent for the arguer to deny it (e.g., Ennis, 1982, p. 83; Berg, 1987, p. 17; Hitchcock, 1999, p. 9). Perhaps this is the source of confusion. However, it remains that such an abstraction is in no sense part of the argument; thus, neither the argument nor the arguer assumes or claims this abstraction, and the vicious regress of self-justifications never gets started. Besides, if the associated conditional were a part of every argument, then, absurdly, would not every argument be deductively valid (so much for the problem of demarcating the valid from the invalid) and exhibit a single overall form (Modus Ponens)?

Nor, of course, am I here denying that deductive validity is monotonic, "that is, if you start with a deductively valid argument, then, no matter what you *add* to the premises, you will end up with a deductively valid argument" (this standard definition is from Sainsbury, 1991, p. 369). There is no question that adding *C*, *D*, etc. to Carroll's *A*-*B*-*Z* argument at the beginning of this paper still gives you a deductively valid argument. Botting (2017, p. 35) contends that if you add *C*, *D*, etc. here, "it is arguable that these are not different arguments, since they each have exactly the same informational content". Botting further holds that in the absence of informational ampliation, "it is no problem at all that there could be an infinite number of premises". At a certain level of abstraction, this seems true. Needless to say, however, there would be problems if, for example, one was engaged in trying to accurately reconstruct a stated argument that when stated, was expressed simply along the lines of *A*-*B*-*Z*.

The serious mistakes arise in taking any of this to indicate that each of *C*, *D*, etc. is, as Botting claims, "not an ampliation, but is part of the argument's content and hence part of the argument" (p. 38). In the first place, this appears inconsistent: how could *C*, *D*, etc. be part of the argument's content yet add nothing to that content (no "ampliation")? Moreover, by definition, if a whole has parts, and some parts are missing or not included in the whole, the whole is *incomplete*. This means that for Botting, Carroll's *A*-*B*-*Z* argument would be incomplete without the inclusion of *C*, *D*, etc. And since there appears to be nothing relevantly special about Carroll's *A*-*B*-*Z* argument, such a view as Botting's would

mean that at least every deductively valid argument is a vicious infinite regress, that is (as we saw in section 2), an infinite series with no explanatory power to justify its quantitative extravagance. To this Botting has replied (personal correspondence), "*C* and *D* are redundant, but are part of the content for precisely that reason!" We could go around and around, but the underlying problem seems to be a failure to distinguish between what *can* be added to a deductively valid argument (in virtue of monotonicity) and what *must* be added (such that otherwise the argument is incomplete).

5. EPISTEMIC INFINITISM AND CONCLUSIONS

My diagnosis of infinite regress in informal logic is that it arises largely by confusing an RSA criterion of argument evaluation—whether it be relevance, sufficiency, or acceptability—with argument content, usually premise material. Such a confusion generates a vicious infinite series of self-justifications. The Groarkes, on the other hand, do not even consider this possibility. Instead, they locate the source of informal logic's infinite regress in the broad generality that ancient and modern skeptical epistemology "can be used to raise doubts about any belief or principle of reason, turning any argument into an attempt at justification which is never allowed to end." Accordingly, they say "the regress problem is not unique to the theory of informal logic" (2002, p. 53), and "it is a mistake to think that there is a way to answer the regress problem on its own terms". Rather, they advocate a pragmatic approach: "we will do better to dismiss the problem by appealing to convention and utility" (p. 57).

Thus, I think that the connection the Groarkes draw between skeptical epistemology and infinite regress in informal logic is spurious in that there are reasons for informal logic's regress that are independent of skeptical epistemology. Moreover, the Groarkes appear to fail to recognize the possible viability of epistemic infinitism, although this is perhaps understandable. Klein and Turri say in their article "Infinitism in Epistemology" that infinitism had been a neglected theory, but "there has been some recent interest in infinitism, beginning when Peter Klein published the first in a series of articles defending infinitism (Klein, 1998)".[5] Epistemic infinitism (along with its rival theories of coherentism

[5]*Internet Encyclopedia of Philosophy* [http://www.iep.utm.edu/inf-epis/]. Klein and Turri further summarize the landscape: Foundationalists, coherentists, and infinitists "agree that knowledge or justification requires an appropriately structured chain of reasons. What form may such a chain take? Foundationalists opt for non-repeating finite chains. Coherentists (at least linear coherentists) opt

and foundationalism) is a counter, not a surrender, to skepticism. The key idea is that the justification regress is not absurd, so it is not the case that all beliefs are thrown into doubt. Infinitism holds that any reason can be subject to further legitimate challenge; it does not involve embarking on the kind of self-justificatory regress we have seen related to the RSA criteria, e.g., a Carroll-type regress. There being a potentially infinite series of non-repeating reasons in favour of a proposition does not mean that one can actually give them; according to infinitism, the reasons might continue to be available, although of course at some point one will have to stop producing them. Yet any such series of justificatory reasons, as that very description suggests, is illuminating or explanatory—progress is made, justification is enhanced—which contrasts starkly with a Carroll-type regress (understood as related to the RSA sufficiency criterion). The only thing these two types of infinite series really have in common is that they may each be generated by interminable Why?-questions. But my point is that you are always getting somewhere (at least in theory) with your child, unlike Achilles ever gets with the Tortoise in Carroll's tale. To the Tortoise's questioning, Achilles gives the same answer, recursively repeated over and over.

The idea of the dialectical tier is perhaps the most prominent case of an infinite "regress problem" in informal logic that epistemic infinitism addresses. Johnson's discussion of the dialectical tier may be best known. He says "arguments in the paradigmatic sense require a dialectical tier in which the arguer discharges his or her dialectical obligations: i.e., anticipates objections, deals with alternative positions, etc." (2003, p. 43). Since this involves responses to objections (or alternatives), responses to objections to those first responses, responses to objections to those second responses, and so on, Govier famously contended that this "would be a staircase that mounts forever. A theory demanding such an explosion is not a realistic or coherent one" (1999, p. 233). Epistemic infinitism would insist that this series is not vicious or incoherent, but of course would allow that the activity of proving cannot go on forever. Natural

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for repeating finite chains. Infinitists opt for non-repeating infinite chains." As here, infinitists tend not to make much of the distinction between *a posteriori* and *a priori* beliefs, but according to Aikin, it constitutes a reason to adopt "impure infinitism": "there is nothing *prima facie* incoherent with the thought that an infinite series of inferential justification could have other factors at play than inferential relations between beliefs. Some beliefs are more intuitive than others, some beliefs are caused by occurrent experiential states, and some beliefs have a kind of formal character to them that all stand as *sui generic* evidence" (2011, p. 59).

stopping points, provisional as they might be, would be provided by pragmatic conditions of dialectical adequacy.

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