

Instrumental Rationality and Carroll's Tortoise

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ABSTRACT: Some philosophers have tried to establish a connection between the normativity of instrumental rationality and the paradox presented by Lewis Carroll in his 1895 paper "What the Tortoise Said to Achilles." I here examine and argue against accounts of this connection presented by Peter Railton and James Dreier before presenting my own account and discussing its implications for instrumentalism (the view that all there is to practical rationality is instrumental rationality). In my view, the potential for a Carroll-style regress just shows us that since instrumental rationality involves a higher-order commitment to combine our willing an end with our taking the necessary means, it therefore cannot, on pain of regress, itself be added as a conjunct to one of the elements to be combined. This view does not support instrumentalism.

KEYWORDS: Lewis Carroll, James Dreier, infinite regress, instrumental rationality, instrumentalism, practical rationality, Peter Railton

Lewis Carroll's 1895 paper "What the Tortoise Said to Achilles" introduces the idea that a paradox emerges if the rules of logical inference are formulated as premises in an argument.¹ Recently, some philosophers have argued that the basic thought of Carroll's paper could shed light on questions in moral philosophy concerning the normativity of instrumental rationality. Instrumental rationality, roughly speaking, concerns the rational requirement to take the necessary means to one's ends. Some philosophers (call them "instrumentalists") believe that all there is to practical rationality is instrumental rationality.² While there may be a number of ways to formulate and defend the instrumentalist position, I am here interested in those philosophical defenses of instrumentalism that aim to show that there is something special about the normativity of instrumental rationality, something which sets it apart from other supposed principles of rationality. Some philosophers believe that the paradox pointed to by Carroll (henceforth "Carroll's Tortoise") helps illustrate how instrumental rationality possesses some basic or undeniable normative status, unlike other supposed principles of rationality, thereby supporting instrumentalism.³

The aim of this paper is to consider the relationship between Carroll's Tortoise and instrumental rationality and (secondarily) to ask whether the proper understanding of this relationship would lend support to instrumentalism. I will consider accounts of this relationship presented by Peter Railton (section I.) and James Dreier (section II.) before proceeding to present my own account (section III.) Ultimately, I argue that reflection on the relationship between Carroll's Tortoise and instrumental rationality leads to the conclusion

that since instrumental rationality involves a higher-order commitment to combine our willing an end with our taking the necessary means, it therefore cannot, on pain of regress, itself be added as a conjunct to one of the elements to be combined. While I avoid discussing the very large question whether instrumentalism is true, I conclude that this understanding of the relationship between Carroll's Tortoise and instrumental rationality does not, in itself, lend any support to instrumentalism.

I. Instrumental Rationality and Logical Inference

Lewis Carroll (1895) shows how a paradox arises if one has a certain view about how the rules of logical inference relate to the premises of an argument. The Tortoise begins by considering an argument:

- A) Things that are equal to the same are equal to each other.
- B) The two sides of the Triangle are equal to the same.

Therefore, Z) The two sides are equal to each other.

The Tortoise then adopts a skeptical position and asks how he can be logically forced to accept Z as true when he accepts A and B as true. Achilles then attempts to supply the Tortoise with what is required for him to be logically forced to accept Z:

- C) If A and B are true, Z must be true.

Once this "missing premise" has been added to the argument, surely the Tortoise's skepticism will be resolved, thinks Achilles. The Tortoise grants C as true, but then resumes his skepticism. He accepts A, B and C as true, but again asks how he can be logically forced to accept Z as true. Achilles again responds by supplying the Tortoise with the "missing premise":

- D) If A, B and C are true, Z must be true.

But, of course, the Tortoise again repeats his skeptical worry. Achilles soon realizes, with "a touch of sadness in his tone," that the process of adding premises to combat the Tortoise's skepticism continues to infinity (280).

Peter Railton (1997) notes that Carroll's Tortoise shows us that one cannot treat a rule of logical inference (particularly *modus ponens*) as a premise in the very argument to which the rule of inference is applied or else one finds oneself in an infinite regress. He thinks that a parallel point can be made about instrumental rationality. Railton considers the following argument:

- 1) E is an end of mine.
- 2) Means M would secure E.
- 9) So : There is that much to be said deliberatively in favour of my doing M, or against my having E. (76-77)

Railton's Tortoise-like skeptic then asks "Isn't this argument missing something? -- Doesn't it suppose not only that I have end E, but that I have the further aim, call it F, of choosing so as to bring about the realization of my ends? If I didn't have that further end, couldn't I reject any relevance of 1 and 2 to my

deliberation?" (77). Now suppose that we respond by suggesting that we add a premise to the argument above:

- 3) F [= choosing so as to bring about the realization of my ends] is an end of mine.

Here we are treating instrumental rationality as just another end the agent has (just as Carroll's Tortoise treated *modus ponens* as just another premise). Railton notes:

But if one did not already recognize that having an end makes deliberatively relevant questions about the means that would advance it -- if, that is, 1-2 were insufficient to support the conclusion 9 -- then adding the further premise 3 could hardly help (77).

Railton sees an infinite regress developing here parallel to the one pointed out by Carroll. This consideration leads Railton to reply to the skeptic in the following way:

'You [skeptic] must already see -- and feel -- the "practical logic" of what you claim to find arbitrary and problematic: the bearing of ends upon means.' If you reply, 'Well, so that's just another end of mine -- I can change it' then we can answer 'No, on pain of regress, it cannot be just another end of yours.' (77)

Just as *modus ponens* cannot be just another premise in an argument, instrumental rationality cannot be just another end, on pain of regress.

I do not find Railton's account of the relationship between Carroll's Tortoise and instrumental rationality convincing. Before directly addressing Railton's argument, let us consider an overly simplistic account of the rationality of belief formation. Let us postulate a basic normative requirement in our simplistic account: one ought to believe a hypothesis if it is supported by good evidence. Call this requirement "H-E". Someone might put the following argument before the skeptical Tortoise:

- 1) H is supported by good evidence.
- 9) You ought to believe H.

The Tortoise now challenges the argument by claiming that it is missing something, specifically something that would allow him to see the force of 9 given 1. Achilles, who has fortunately reappeared, now suggests that we add H-E as a premise:

- 2) You ought to believe a hypothesis if it is supported by good evidence.

The stubborn Tortoise now poses the challenge of why 9 follows from 1 and 2. But it dawns on Achilles that the answer to this challenge will not be the same as his answer to the last. Here Achilles would suggest that the skeptic just needs *modus ponens* in order to see how 9 follows from 1 and 2. Achilles now knows that there will be problems from here on out, but also knows that these problems concern the rules of logical inference and not the principles of rationality. If the rules of logical inference are put into the premises, the pains of regress begin.

But there is nothing wrong with putting H-E into the premises. It is precisely what the argument was missing!

Now let us consider how this relates to instrumental rationality by returning to the argument Railton was considering:

- 1) E is an end of mine
- 2) Means M would secure E
- 3) F [= choosing so as to bring about the realization of my ends] is an end of mine.
- 9) So : There is that much to be said deliberatively in favour of my doing M, or against my having E.⁴

Now, when the Tortoise questions why 9 follows from 1,2 and 3, it seems that we would *not* answer him by again adding a principle of instrumental rationality as a further premise. Rather, if one were to add a further premise, one should add *modus ponens*. The Tortoise accepts that if an option brings about the realization of his end, then he should choose it or abandon the end *and* he accepts that a certain option (M) brings about the realization of his end. The simple application of *modus ponens* gives him the conclusion that he should choose M or abandon the end. (The addition of *modus ponens* as a premise, of course, would yield a regress.) We should not think that Achilles would have to again add a principle of instrumental rationality here to respond to the skeptical Tortoise. (In that sense, instrumental rationality is like our rational requirement H-E.) No regress results from inserting a principle of instrumental rationality into the argument.

II. Instrumental Rationality and Practical Rules

James Dreier (2001) presents an argument for the special status of his principle M/E, which states that “If you desire to ψ , and believe that by ϕ -ing you will ψ , then you ought to ϕ ” (38). He believes that there is a striking parallel between his argument for the special status of M/E and Carroll’s Tortoise. Also, he believes that the special status of M/E supports instrumentalism, specifically the claim that “the only ultimate sort of reasons are instrumental reasons” (43).

Dreier asks the reader to consider the case of Ann. Ann desires to go to a good law school. Although she believes that an LSAT prep course will improve her chances of getting in, she is not motivated to take the course. Ann also believes that the rule M/E instructs her to take the course, given her desires and beliefs. So what is Ann missing? What could we add to her “mental inventory” that would be sufficient to motivate her to take the LSAT prep course? One possible answer is that Ann is missing a desire to comply with M/E. According to this answer, if Ann were to desire to comply with M/E, she would be motivated to take the LSAT prep course. Dreier rejects this answer. Here is his proposal of this possible answer and his argument against it:

Were she [Ann] to desire to comply with M/E, would she then be motivated to take the LSAT prep course? By hypothesis, Ann suffers from this failure of practical reason: she fails to be motivated by the

acknowledged means to her desired ends. So adding a desire (complying with M/E) does not in her bring about the motivation to perform an acknowledged means to her end of doing well in the LSAT. We cannot bring about in Ann the motivation to perform an action acknowledged by her to be a means to a certain end, by getting her to desire that end. This is a good way to motivate normal rational agents, but in Ann's case it is futile. But this futile attempt is exactly what we would be engaged in if we were to try to bring Ann to desire to take the LSAT prep course by giving her a desire (complying with M/E) that would motivate her to take the prep course. So what Ann is missing cannot be a desire. Call this the Tortoise argument... (39).

In other words, Ann's form of irrationality is such that even if her mental inventory were supplemented with a desire to comply with M/E, this supplement would not be sufficient to motivate her to take the LSAT prep course.

Dreier calls this argument the Tortoise argument because the attempt to supplement Ann's mental inventory with a desire to comply with M/E runs parallel to Achilles' attempt to supplement the Tortoise's stock of premises with *modus ponens*. The Tortoise's acceptance of *modus ponens* as a premise was not sufficient to yield his acceptance of the conclusion that the two sides of the triangle were equal to each other. (Likewise, the attempt to supplement Ann's mental inventory with a desire to comply with M/E was not sufficient to motivate her to take the LSAT prep course.) The Tortoise's acceptance of *modus ponens* as a premise was futile because the Tortoise refused to apply *modus ponens* to his premises. (Likewise, Ann's attainment of a desire to comply with M/E is futile because Ann, by hypothesis, refuses to apply M/E to her desires and beliefs.)

Dreier believes that the Tortoise argument shows that M/E has a "special status" much like *modus ponens*:

Now we've singled out the M/E rule as special. Once you accept the M/E rule, what you need to get you to accept other rules is one or another desire. But no desire will get you the M/E rule itself. (Compare *modus ponens*. Once you have *modus ponens*, what you need to get you to accept other rules is a belief in some conditional. But a belief in a conditional won't get you *modus ponens* itself.) So means-ends rationality has a special status (41).

All other supposed rules of rationality are hypothetical in that they are applicable only if we desire to comply with them. However, M/E is not hypothetical in this sense. Of course, the specific requirements issued by M/E will be hypothetical in that they depend on what our ends are. But the imperative to comply with M/E is a categorical one. He goes on to suggest that this special status supports instrumentalism (42-43).

My worry about Dreier's Tortoise argument is that it confuses instrumental rationality with the normativity of practical rules in general. Dreier's use of Carroll's Tortoise shows that there is something special about the normativity of practical rules in general, but does not show that there is something special about the normativity of instrumental rationality in particular.

Let's begin with the case of Anita. Anita desires to comply with rule R and believes that R requires her to perform action A. Suppose that Anita is still not motivated to do A. What's missing? One answer is that Anita is missing a desire to comply with rule R*. R* states that if one desires to comply with a rule R and believes that R requires her to perform A, then one ought to A. Now it should be obvious that if Anita is not motivated to comply with R she will also not be motivated to comply with R*. (A rule that says that you ought to comply with rules will not be convincing to someone like Anita -- that is, someone who is not motivated by rules that one sees as applicable and desires to comply with.) Nor would she be motivated to comply with rule R**, which states that one ought to comply with R*, nor R***, which states that one ought to comply with R**, and so on *ad infinitum*. Here we have a case that runs parallel to Carroll's Tortoise.

But is the case of Anita the same as the case of Ann presented by Dreier? Not exactly. The case of Anita tells us something about normativity of practical rationality in general. Any rule of practical rationality could be substituted for R. This includes principle M/E, but includes other rules as well. The case of Anita tells us that there is something basic about the normativity of practical rules: if one is not motivated to comply with rules one desires to comply with and sees as applicable, the addition of a rule saying that one ought to comply with rules one desires to comply with and sees as applicable will be utterly futile.

While the case of Anita tells us something about the normativity of the rules of practical rationality in general, the case of Ann was supposed to convince us that there is something special about instrumental rationality. However, it should be clear that the case of Ann was an instance of the more general Anita case, the only unique feature being a substitution of M/E for the initial rule R. The case of Ann does not involve a regress of principle M/E, but does involve a regress once R* is introduced. Since R* says something about the normativity of practical rules in general, the case of Ann does not convince me that there is something special about instrumental rationality.

But perhaps all that Dreier means by M/E is something like R*. Indeed, the two rules do sound a lot alike. M/E tells us that "If you desire to ψ , and believe that by ϕ -ing you will ψ , then you have a reason to ϕ ." R* tells us that if one desires to comply with a rule R and believes that R requires one to perform A, then one ought to A. One important difference is in the scope of the two rules. We have a number of ends that do not involve a desire to comply with a rule. For example, this evening I aim to cook dinner and see a movie. Neither of these ends can easily be construed as involving a desire to comply with a rule. Yet

instrumental rationality is thought to apply to these ends. Most if not all philosophers, both instrumentalists and non-instrumentalists, would claim that I would be irrational if I failed to take the necessary means to my ends -- if, for example, I failed to take the necessary means to cooking dinner and seeing a movie. If all Dreier means by M/E is something like R*, then Dreier's version of instrumental rationality would be so thin that these failures would not be called irrational. And if these failures would not be called irrational, then instrumentalism becomes a highly implausible view.

III. Carroll's Tortoise Revisited

In my view, the connection between Carroll's Tortoise and instrumental rationality is a limited one, at least when compared to the claims made by philosophers such as Railton and Dreier. In my view, which I'll explain below, the potential for a Carroll-style regress just shows us that since instrumental rationality involves a higher-order commitment to combine our willing an end with our taking the necessary means, it therefore cannot, on pain of regress, itself be added as a conjunct to one of the elements to be combined. (More precisely, it cannot be added as a conjunct to one of the elements to be combined *and* be expected to do its work *without* opening up the possibility of skepticism leading to an infinite regress. So, when I say that it "cannot be added as a conjunct," I do not mean to make the very strong claim that such an addition is impossible, but only that it is impossible to do so and avoid troublesome consequences.)

There are two components to this view, which will be explained in greater detail below. First, instrumental rationality involves a higher-order commitment to combine our willing an end with our taking the necessary means; it is a restriction on a certain combination of attitudes. If you have a certain end, then you are required to take the necessary means or abandon the end. One could escape instrumental irrationality by either dropping one's ends or by coming to take the necessary means. In this sense, the requirement of instrumental rationality shares the structure of the requirement to have consistent beliefs, with which we can comply by either coming to believe the logical consequences of our beliefs or by abandoning our initial beliefs. Second, given that instrumental rationality involves a restriction on a certain combination of attitudes, this requirement itself cannot be formulated as one of the elements to be combined, for such a formulation would allow for the kind of skepticism proposed by Carroll's Tortoise.

As for the first component, the logic behind instrumental rationality is best understood through some recent work by John Broome (2000). Broome distinguishes between two different normative relations: the 'ought' relation and the 'requirement' relation (79-83). The requirement relation, unlike the ought relation, presents a restriction on certain *combinations* of attitudes and this difference can be seen as a difference in logical structure. For the ought relation, if p is true, then it is the case that we ought to see to it that q (where p and q are

propositions). For example, if John is drowning, we ought to see to it that he is rescued. Formally, $p \rightarrow Oq$, where “O” stands for “you ought to see to it that” and “ \rightarrow ” stands for the material conditional. For the ‘requirement’ relation, however, normativity is attached to the *relation* between p and q and not to consequent, so we would formally represent this as $O(p \rightarrow q)$; we ought to see to it that if p is true, so is q . Broome provides some examples of normative requirements, including the requirement to believe the logical consequences of one’s beliefs and the requirement of instrumental rationality (83-90). These requirements can be satisfied in two ways. Concerning the former, one could come to believe the logical consequences of one’s beliefs or one could abandon one’s initial beliefs. Concerning the latter, one could take the means to one’s end or one could abandon the end. ‘Ought’ relations do not allow for a similar kind of revision since they do not attach normativity to the relation.

One advantage of Broome’s distinction between the ‘ought’ relation and the ‘requirement’ relation is that it allows us to make sense of the idea that individuals are normatively required to do things they ought not to do. Suppose you do not believe the logical consequences of your beliefs. We can say that you are *normatively required* to believe the logical consequences. However, if your initial beliefs are false, it is clearly not the case that you *ought to* believe the logical consequences. (If one doubts this last point, consider that beliefs logically entail themselves and it would be absurd to say that one’s belief that p entails that one ought to believe that p . Broome’s distinction allows us to rule out self-justifying beliefs.) (84) Likewise, consider the example of instrumental rationality. If I have some end, I am *normatively required* to take the necessary means to my end. But, of course, it does not follow that I *ought to* take the necessary means to my end since my end might be a misguided one. (If one doubts this last point, consider that instrumental rationality sometimes involves discovering what is constitutive of one’s ends -- for example, finding out what constitutes an egregious harm granted one wills to commit an egregious harm -- and it would be absurd to say that if one has some end, one ought to do what is constitutive of that end. Broome’s distinction allows us to rule out self-justifying ends.) So, following Broome, we can assume that the logical structure of the requirement of instrumental rationality can be formally represented as “ $O(p \rightarrow q)$ ”.

Now let us turn to the second component of the view. In an excellent discussion of Carroll’s paper, J. F. Thomson (1960) argues that the lesson of Carroll’s Tortoise is that the proposition that an argument is a valid one cannot be formulated as a premise in the argument to which it refers. (Of course, as Thomson notes, it may be formulated as a premise in other arguments, such as when I point to the validity of one of my arguments above in an argument for the conclusion that this paper contains some valid arguments. But an argument cannot, without opening the door for a regress, contain the premise that the argument is itself valid.) Thompson also argues that if one really thought the

argument to be valid, there would be no need to formulate this proposition as a premise in the argument in the first place:

Just as the statement that an argument is logically valid cannot turn out to be a premise in that argument, so, and indeed very obviously, a hypothetical cannot turn out to be its own antecedent or a conjunct in its own antecedent. So if, having got you to accept premises P_1 to P_k and wanting you now to do what I think you are committed to doing, viz. accept Q , I assert that if P_1 and ... and P_k then necessarily Q , I am not, or should not regard myself as, asking you to accept another premise. For *ex hypothesi* I suppose that you already have enough premises (101).

We can make a parallel point about instrumental rationality. If, having gotten you to accept a certain end p and wanting you now to do what I think you are committed to doing, viz. take the means q , I assert that $O(p \rightarrow q)$, I am not, or should not regard myself as, asking you to form another end to be conjoined with p in the antecedent. For, *ex hypothesi* I suppose that you already have the ends that require you to take the means.

However, though instrumental rationality cannot, without opening the door for a Carroll-type skepticism, be adopted as an end alongside p in the antecedent, one could accept that $O(p \rightarrow q)$ as a *higher-order* commitment, and then see that one has the (lower-order) end p , and then come to take the means q . Similar considerations apply to the requirement to believe the logical consequences of your beliefs. One could adopt a higher-order commitment to believe the logical consequences of one's (lower-order) beliefs, see that one has a certain (lower-order) belief and come to believe its logical consequence.

The requirement of instrumental rationality cannot be adopted as a lower-order end since the point of the requirement is to connect lower-order ends to the required means (and it could not do this if it were itself added as a conjunct to the lower-order ends since that would introduce the Tortoise's skeptical question of what is to connect the set of lower-order ends to the required means), and furthermore, it would be unnecessary to add it as a lower-order end since we have already assumed, *ex hypothesi*, that the agent has the ends sufficient to require him to take the means. The requirement to believe the logical consequences of one's beliefs cannot be adopted as a lower-order belief since the point of the requirement is to connect lower-order beliefs to their logical consequences (and it could not do this if it were itself added a conjunct to the lower-order beliefs since that would introduce the Tortoise's skeptical question of what is to connect the set of lower-order beliefs to the required belief in the logical consequences), and furthermore, it would be unnecessary to add it as a lower-order belief since we have already assumed, *ex hypothesi*, that the agent has the lower-order beliefs sufficient to require him to believe the logical consequences.

However, we should resist the temptation to think that this shows that agents are necessarily committed to having this higher-order commitment on

pain of regress. No such conclusion follows. It is not that, as Railton thinks, “if one did not already recognize that having an end makes deliberately relevant questions about the means that would advance it – if 1-2 were insufficient to support the conclusion 9 – then adding the further premise 3 could hardly help.” It indeed could help such a person, as I argued in section I. above. It just could not help if the further premise added were not recognized as a *higher-order* commitment since this would open the door for the skeptic to keep adding lower-order ends as the Tortoise does. Of course, it may be *true*, for other reasons, that agents are necessarily committed to the requirement of instrumental rationality. Perhaps Christine Korsgaard (1997) is right in thinking of the requirement as a constitutive commitment of willing – something to which we need to be committed in order to count as agents. But it is not true that we must be committed to instrumental rationality on pain of regress.

One might still object that there is something special about this higher-order commitment. Dreier assumes that the addition of a higher-order commitment to instrumental rationality to an agent’s psychology where the agent (Ann, above) is not motivated to take the necessary means to her desired ends would be futile since it merely adds another end (the higher-order commitment) to which the agent would be unmotivated to take the necessary means.⁵ In section II above, I conceded that if the agent were (like Anita) not motivated to comply with rules with which she desired to comply and which she saw as applicable, then the addition of the higher-order commitment of instrumental rationality would indeed be futile, as would the addition of *any* rule as a higher-order commitment. But if the agent is not like Anita, I see no reason to think that the addition of a higher-order commitment to instrumental rationality would be futile.

IV. Conclusion

I have argued that reflection on the relationship between Carroll’s Tortoise and instrumental rationality leads to the conclusion that since instrumental rationality involves a higher-order commitment to combine our willing an end with our taking the necessary means, it therefore cannot itself be added as a conjunct to one of the elements to be combined without opening the door for a Carroll-type skepticism leading to an infinite regress. What are the implications of this view for instrumentalism? This conclusion does not support the claim that we are necessarily committed to instrumental rationality (though this conclusion may well be true for other reasons) nor does it point to some feature of instrumental rationality that shows it to have the sole right to the territory of practical rationality. What this conclusion does show is an important feature of the logical structure of instrumental rationality. Following Broome’s analysis of how instrumental rationality requires a certain combination of attitudes, it

becomes clear that the requirement itself cannot be held as one of those elements to be combined without opening room for skeptical questions along the lines of Carroll's Tortoise.⁶

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Notes

¹ For general discussion and criticism of Carroll's paper, see Thompson (1960), Stroud (1979), and Smiley (1995). For attempts to construct analogs of Carroll's paradox for practical rationality relevant to the rational justification of morality, see especially Blackburn (1995) and Schueler (1995).

² For recent elucidation and defense of the instrumentalist position see Fehige (2001), Sobel (2001) and Hubin (2001). For criticism of instrumentalism, see especially Korsgaard (1997) and the second part of Hampton (1998).

³ Dreier's paper, considered in section II below, argues that the connection between Carroll's Tortoise and instrumental rationality supports instrumentalism in this way. Dreier (2001) is a revised version of an earlier paper -- Dreier (1997). The revisions are not significant to the argument in section II. Nonetheless, I will rely on Dreier (2001). For another argument for the basic or undeniable status of instrumental rationality, see Skidmore (2002).

⁴ I have here presented the argument as it is presented by Railton. But, it is hard to see how the argument, as stated, is logically valid. The content of (3) should instead read "If E is an end of yours, and means M would promote E, then there is that much to be deliberatively said in favor of my doing M, or against my having E." This would allow for the conclusion to follow by *modus ponens* as it does in Carroll's case of the triangles equal to the same and my other case of the hypothesis supported by good evidence.

⁵ I have here shifted away from Dreier's framing of the issue in terms of "desires" and instead reformulated his point in terms of "ends." One might think that there are significant differences between desires and ends, such that the requirement to take the necessary means is not in place for desires which are not also our ends. However, this issue is not relevant to the argument presented here.

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