

CHRYSIPPUS' PUZZLE ABOUT IDENTITY

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PHILO OF ALEXANDRIA, in *De aeternitate mundi* 48 (*SVF* ii. 397), gives the following brief and notoriously cryptic account of a puzzle about personal identity created by the Stoic philosopher Chrysippus:

(1) Chrysippus, the most distinguished member of their school, in his work *On the Growing* [*Argument*], creates a freak of the following kind. (2) Having first established that it is impossible for two peculiarly qualified individuals [*δύο ἰδίως ποιούς*] to occupy the same substance jointly, (3) he says: 'For the sake of argument, let one individual [*τὸν μὲν*] be thought of as whole-limbed, the other [*τὸν δέ*] as minus one foot. Let the whole-limbed one be called Dion, the defective one Theon. Then let one of Dion's feet be amputated.' (4) The question arises which one of them has perished, and his claim is that Theon is the stronger candidate. (5) These are the words of a paradox-monger rather than of a speaker of truth. For how can it be that Theon, who has had no part chopped off, has been snatched away, while Dion, whose foot has been amputated, has not perished? (6) 'Necessarily', says Chrysippus. 'For Dion, the one whose foot has been cut off, has collapsed into the defective substance of Theon. And two peculiarly qualified individuals cannot occupy the same substrate. Therefore it is necessary that Dion remains while Theon has perished.'¹

Perhaps the most widely accepted interpretation of this passage is that offered by David Sedley in 1982.² In this paper, I will offer an interpretation that leaves the most important features of Sedley's

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¹ Trans. A. A. Long and D. N. Sedley, *The Hellenistic Philosophers*, i. *Translations of the Principal Sources with Philosophical Commentary* [*Hellenistic Philosophers*] (Cambridge, 1987), 171–2.

² D. N. Sedley, 'The Stoic Criterion of Identity' ['The Stoic Criterion'], *Phronesis*, 27 (1982), 255–75.

account intact, chief among which is his view on the basic purpose of the puzzle. Like Sedley, I take the fact that the puzzle appears in a work called *On the Growing Argument* to indicate that it is a rejoinder to, and indeed a *reductio ad absurdum* of, the Growing Argument. Where I diverge from Sedley's approach, I do so to shore it up against certain objections to which I think it is vulnerable. My chief concerns are to achieve a better fit with the text, and to ensure that since we view the puzzle as a *reductio ad absurdum*, we do not take Chrysippus to be deducing a contradiction by means of premisses extrinsic to the Growing Argument. Otherwise, Chrysippus' *reductio ad absurdum* would fail in its purpose of showing that the Growing Argument is *internally* inconsistent.³

I also follow Sedley on two other significant interpretative points. First, I agree that since, from at least Chrysippus' point of view, the puzzle runs up against the principle that 'two peculiarly qualified individuals cannot occupy the same substrate', we *must* suppose that we are dealing with one body at the outset and that Theon is a part of Dion.⁴ Second, the justification for Dion's survival that Sedley supplies on behalf of Chrysippus seems right. The amputee who is grieving over his severed foot must be Dion since 'Theon cannot have lost a foot that was never part of him in the first place'.⁵

Here is a very preliminary paraphrase of how Chrysippus' argument appears to run that incorporates these points. At the outset we have one living, anatomically complete human being named Dion, a region of whose body has been named Theon—the whole body except one of its feet. The foot just mentioned is then amputated, with the result that either Dion or Theon must perish because, as Chrysippus tells us (and as Philo apparently agrees), 'two pe-

³ By an extrinsic premiss, I mean a premiss that is neither explicit in the argument nor plausibly ascribed to the arguer as common sense.

⁴ Otherwise, when the foot is chopped off, the resulting state of affairs would not run up against this principle, and it is apparent from the text that it must. Besides, as Sedley also points out, Philo essentially tells us that Theon is a part of Dion several pages later in the same text (*Aet.* 49–51). Prior to Sedley's 1982 article, the consensus was 'that [Dion and Theon] are supposed to be two numerically distinct individuals who are qualitatively identical except for the fact that Theon has a foot missing: hence when Dion's foot is amputated the two are made completely indistinguishable.' Sedley cites M. E. Reesor, 'The Stoic Concept of Quality', *American Journal of Philology* 75 (1954), 40–58; J. M. Rist, 'Categories and their Uses', in J. M. Rist (ed.), *Stoic Philosophy* (Cambridge, 1969), 152–72, repr. in A. A. Long (ed.), *Problems in Stoicism* (London, 1971), 38–57; J. B. Gould, *The Philosophy of Chrysippus* (Leiden, 1970).

⁵ Sedley, 'The Stoic Criterion', 269.

cularly qualified individuals cannot occupy the same substrate'.⁶ A dispute arises about who should perish. Chrysippus claims that Dion should survive and Theon should perish, since it cannot be Theon who is grieving over his severed foot. But Philo claims, on behalf of the Academics, that Theon must survive and Dion perish, 'for how can it be that Theon, who has had no part chopped off, has been snatched away, while Dion, whose foot has been amputated, has not perished?' I will argue in the sequel that the result favoured by Philo is congenial to what the Growing Argument would predict—that Theon should survive and Dion should perish—while the result favoured by Chrysippus is not. This, I believe, supports Sedley's claim that Chrysippus' puzzle is a *reductio ad absurdum* of the Growing Argument.

I

Although the name 'Growing Argument' (*αὐξανόμενος λόγος*) was coined by the Academics, the argument itself originated with Epicharmus, the comic playwright of the fifth century BC. The argument turns on the assumption that the personal identity of an individual is a strict function of its material composition. Since the material composition of our bodies, so the argument goes, is in a state of constant flux, and since our identities are a strict function of this material composition, our personal identities are also in constant flux. Epicharmus seems to have meant the argument as a joke, since he exploited its humorous consequences as a stratagem for evading one's creditors. If, as seems probable, it was the Academy of Arcesilaus that revived the argument in the third century BC, then it also seems likely that the Academics meant it to be a *reductio ad absurdum* of the very notion of personal identity.⁷ The conclusion that our identities are in constant flux obviously conflicts

⁶ Philo, who is on the side of the Academics, seems just to assume this principle when he speaks as if the only problem at issue after the amputation is how to determine who has died.

⁷ At *Comm. not.* 1059 B ff. Plutarch lays out the dialectical context for the dialogue in which the account of the Growing Argument is given (at 1083 A–1084 A). The interlocutor of Diadoumenos has just come from a group of Stoic friends who have been denouncing the 'older Academics'. The interlocutor says that one of his friends had opined that it was providential that Chrysippus had come after Arcesilaus and before Carneades, because by means of his rejoinders to Arcesilaus, Chrysippus had left many aids to sense perception. Given this background, I follow Sedley ('The

with the common-sense view that personal identity is continuous over time. And given Plutarch's testimony that the Academy 'suspended judgement about everything' (*Against Colotes*, 1120c9), we should probably assume that the Growing Argument is meant to be aporetic: that is, instead of taking the Academics to be committed to one or the other of the conflicting views—either that matter is the sole principle of identity, or that identity is continuous over time—we should take them to be exposing a conflict between these views and then suspending judgement about its resolution. In the light of this, then, if Chrysippus' puzzle is itself a *reductio ad absurdum*, it is a *reductio ad absurdum* of a *reductio ad absurdum*, where Chrysippus exposes *unintended* absurdities in the Academics' Growing Argument.

Sedley says that the target of Chrysippus' *reductio ad absurdum* is the Growing Argument's assumption that matter is the sole principle of identity⁸—that the personal identity of an individual is a strict function of its material composition. Even though no such principle is expressed in the puzzle, this view makes good sense of a premiss that would otherwise be quite baffling—the fact that Theon and Dion are apparently related to each other as part to whole. Chrysippus' *reductio ad absurdum* reduces to absurdity the assumption that matter is the sole principle of identity by means of reducing to absurdity the premiss that Theon and Dion are related as part to whole, because the latter is validly deduced from the former. Thus, Sedley says that Chrysippus 'borrows from the Growing Argument's own presuppositions' to 'concoct' a premiss in which Theon and Dion are related to each other as part to whole. 'According to the Growing Argument', he says, 'every material addition to or subtraction from an individual results in his replacement by a new individual; and since in such cases the old and the new individual are related as part to whole or whole to part, the Academic argument does indeed imply that whole and part constitute distinct individuals—the very premise that Chrysippus' own paradox presupposes.'⁹ The material additions and subtractions that Sedley has in mind are, no doubt, the changes in bodily bulk caused by the ingestion and excretion of food. I think, however, that Chrysippus has something a bit more bizarre

Stoic Criterion', 272 n. 17) in ascribing the Academic formulation of the Growing Argument given at 1083 A–1084 A to Arcesilaus.

⁸ Sedley, 'The Stoic Criterion', 270.

⁹ Ibid.

in mind.¹⁰ We are meant, first, to imagine an individual named Theon, who happens to lack a foot. Then we suppose that for a certain restricted period, Theon's body experiences only one material (and quite miraculous) fluctuation—he grows a new foot. According to the Growing Argument, since the material composition of Theon has changed, we now have a new individual. Let us call him Dion. But since the personal identity of each individual is a strict function of its material composition, and since all of the flesh that constituted Theon is still present in a particular region of the individual that we now call Dion, we must still view this region of Dion as a numerically distinct individual that is related to Dion as part to whole. Therefore, Theon is related to Dion as part to whole.

But at first sight, there appears to be a problem. Although this seems to be a valid deduction from the principle that personal identity is a strict function of material composition, *prima facie* it is in direct conflict with the conclusion of the Growing Argument that growth is actually 'generation' and 'destruction'. According to Plutarch, the Growing Argument concludes that 'the prevailing convention is wrong to call these [material fluctuations] processes of growth and decay: rather they should be called generation and destruction, since they transform the thing from what it is into something else' (*Comm. not.* 1083 A 8–C 1). Likewise, the Epicharmus fragment concludes that as a man grows, his former self 'withers' (fragment 2 DK). Therefore, since old individuals allegedly 'wither' when new individuals come into being as a result of growth, Theon should have perished when he grew the foot, rather than becoming part of Dion. Moreover, Plutarch, who is a spokesman for the Academics, seems to think that the notion of two people being in one body is ridiculous. Plutarch, in fact, criticizes the Stoic notion of the peculiarly qualified individual precisely because he says it implies the view that each of us is composed of a multiplicity of entities—a parcel of matter, and a peculiarly qualified individual. For comic effect, Plutarch even likens the Stoics to Pentheus, the deranged king of Thebes, who in seeing double was 'going crazy in his arithmetic' (*Comm. not.* 1083 F 2–3).

¹⁰ One may cavil that what follows is too bizarre, and that if Chrysippus meant something like this, he would have had Theon grow a mole instead of a foot. I will show in the sequel, however, that bringing in the growth of a discrete new part makes better overall sense of the puzzle, even though it produces a scenario that is biologically impossible.

These considerations raise two questions. First, are there resources within the Growing Argument, as it is transmitted to us, to resist the conclusion that Theon is a living part of Dion? If there are, then we will clearly need to rethink our position that Theon is a living part of Dion and perhaps even our claim that Chrysippus' puzzle is a *reductio ad absurdum*. The reason, of course, is that we cannot imagine a *reductio ad absurdum* of the Growing Argument to include premisses that no proponent of that argument would accept. Second, if there are no such resources and the contradiction we have just discussed is unavoidable, can one of the conflicting claims be rejected, and if so, which one? Can one reject the contention that growth is actually 'generation' and 'destruction', or must one reject the conclusion that Theon is a living part of Dion?

These questions can only be answered by taking a closer look at the texts. Fragment 2 of Epicharmus frames the argument as follows:

DEBTOR. If you like to add a pebble to an odd number—or to an even one if you like—or if you take one away that is there, do you think it is still the same number?

CREDITOR. Of course not.

DEBTOR. And if you like to add some further length to a yard-measure, or to cut something off from what's already there, will that measure still remain?

CREDITOR. No.

DEBTOR. Well, consider men in this way too—for one is growing, one declining, and all are changing all the time.¹¹

It seems fairly clear that this version of the Growing Argument permits the same inference that allows Sedley to conclude that Theon is a part of Dion. If I add one pebble to a set of say eight pebbles, the number of pebbles would now be nine but the original eight pebbles would still be present as a subset of the new total. Plutarch's most extended description of the Growing Argument seems to allow precisely the same inference. He lists the premisses of the argument as follows:

All particular substances are in flux and motion, releasing some things from themselves and receiving others which reach them from elsewhere; the numbers or quantities which these are added to or subtracted from do not remain the same but become different as the aforementioned arrivals

¹¹ Trans. J. Barnes, *The Presocratic Philosophers* (London, 1979), 106–7.

and departures cause the substance to be transformed. (*Comm. not.* 1083 B 308, trans. Long and Sedley)¹²

And from these premisses Plutarch concludes that 'the prevailing convention is wrong to call these [material fluctuations] processes of growth and decay: rather they should be called generation and destruction, since they transform the thing from what it is into something else' (*Comm. not.* 1083 B 8–C 1).¹³ It seems clear that if we imagine a case where something 'receives some things from elsewhere' while not at the same time 'releasing some things from itself', nothing in Plutarch's account would block the inference that 'the old and the new individual are related as part to whole or whole to part'. Just as in the Epicharmus fragment, every change in the 'number or quantity' of material parts in an individual results in a change in its identity.¹⁴ And if growth is simply the augmentation of an existing set of material parts, then clearly the unaugmented set will persist as a subset of the augmented set. Granted, an Academic might insist that an individual must be a discrete body, which would defeat the line of argument that I am attributing to Chrysippus. But this would amount to introducing a new premiss that appears nowhere in our sources and does not strictly follow from the view that matter is the sole principle of identity. If the Growing Argument did not contain this premiss, then there would have been no reason for Chrysippus to recognize it in *On the Growing Argument*. The Academics may well claim in a rejoinder to Chrysippus that an individual must be a discrete body, but this should have no effect on how we interpret the text at hand. One might also object that since the Growing Argument envisages diminution, the set/subset relationship that we have been considering would be disrupted when diminution occurs at the same time as growth. But the Growing Argument does not say that growth and diminution acting in concert constitute generation and destruction. Rather, the claim is that growth and diminution each constitute *both* generation and destruction, and for this reason it is perfectly legitimate to consider the case of growth in isolation. This feature of the Growing Argument is quite clear in the Epicharmus fragment. Whether Epicharmus is describing addition or subtraction, the al-

¹² *Hellenistic Philosophers*, 166.

¹³ Trans. Long and Sedley, *ibid.*

¹⁴ Note that this is different from saying that the 'number or quantity' of material parts alone is criterial for identity, which would yield the absurd consequence that all equally numbered sets are identical.

leged outcome is the same: the old number perishes when the new one comes into being. Plutarch's language is more ambiguous, but since he ascribes his argument to Epicharmus without signalling any disagreement, I see no reason to interpret Plutarch's account of the Growing Argument differently. It appears, then, when we consider the case of growth in isolation, that there is nothing in the Growing Argument to block the inference from matter being the sole principle of identity to the possibility that Theon could be a part of Dion.

Since this is the case, and a contradiction is unavoidable between this result and the view that growth is actually 'generation' and 'destruction', we can now turn to the question of which of the two, if either, can be rejected. The fact that the claim that growth is actually 'generation' and 'destruction' appears as a *conclusion* of the Growing Argument helps us here. That is, the foregoing analysis seems to show us that Plutarch and Epicharmus are wrong to claim that the premisses of their argument establish that growth is actually 'generation' and 'destruction'. The supersession of successive individuals undergoing growth results in the *incorporation* of the superseded individuals instead of their destruction. Thus, it appears that one must reject the claim that growth is actually 'generation' and 'destruction' because it has not been validly inferred from the premisses of the Growing Argument. This result, I think, implies that Sedley's view that Theon is a living part of Dion need only be modified to recognize that Chrysippus must have undertaken a certain sort of argument in *On the Growing Argument* prior to the passage that Philo summarizes—one that convicts the Growing Argument of the logical error that I have just described, and *forces* this premiss on the Academics against their will.

II

There also appears to be a problem with including the premiss that 'two peculiarly qualified individuals cannot occupy the same substrate' in a *reductio ad absurdum* of the Growing Argument. I doubt Sedley's claim that a proponent of the Growing Argument would accept this as a 'common-sense principle', chiefly because I find it incredible that the Academics would even acknowledge, much less think it common sense, that there is such a thing as a peculiarly

qualified individual. This is because the 'peculiarly qualified individual' was a Stoic invention intended to neutralize the Academics' Growing Argument. Sedley says that Plutarch, arguing on behalf of the Academics, implicitly accepts the existence of peculiarly qualified individuals in his treatise *On Common Conceptions*. But if we consider the nature of the cited passage, it seems that this cannot be true. The passage that Sedley refers to (*Comm. not.* 1077 C–E) is itself a *reductio ad absurdum* of another Stoic doctrine—that Zeus and Providence come to occupy the same aether during the Conflagration. Arguing on behalf of the Academics, Plutarch supposes that Zeus and Providence are peculiarly qualified individuals so that he can infer the unwelcome conclusion for the Stoics that their story about Zeus and Providence requires two peculiarly qualified individuals to occupy the same substrate. As in any *reductio*, Plutarch entertains premisses that he need not accept—that peculiarly qualified individuals exist—in order to bring out inconsistencies in a contested Stoic theory. Plutarch, in fact, seems to think that the idea of a peculiarly qualified individual is manifestly absurd, on the ground, as I mentioned above, that it implies the non-evident, if not obviously false, claim that each of us is composed of a multiplicity of entities. It is clear from this that Plutarch does not countenance the existence of peculiarly qualified individuals, and it is even clearer that he would not think that any proposition about them could qualify as common sense.

So how should we view the premiss that 'two peculiarly qualified individuals cannot occupy the same substrate' in the light of this difficulty? I think that this obstacle can be overcome as long as we consider that the very definition of personal identity is in dispute. When a Stoic or a proponent of the Growing Argument confronts a puzzle like this, each will construe the term 'individual' according to his own definition (granted, of course, that an Academic would take such a definition dialectically). Consequently, we must keep in mind two points of view as we run through the argument. The Growing Argument defines the individual as a particular collection of material parts. Thus, when a proponent of the Growing Argument is told that Dion and Theon are individuals, he will argue that they are collections of material parts. The Stoics, on the other hand, hold that if Dion and Theon are individuals, they must be peculiarly qualified individuals. So they, of course, will think of Dion and Theon as such when they consider the puzzle. It is important

to note that Philo does not explicitly state that Dion and Theon are peculiarly qualified individuals. And it is also telling that he reports in indirect speech that ‘it is impossible for two peculiarly qualified individuals [δύο ἰδίως ποιούς] to occupy the same substance jointly’ but then switches to a direct quotation as follows: ‘[Chrysippus] says, “For the sake of argument, let one individual [τὸν μὲν] be thought of as whole-limbed, the other [τὸν δέ] as minus one foot.”’ This leads me to suspect that the two premisses just stated are not part of a continuous quotation, and that the τὸν μὲν and τὸν δέ in line 3 need not refer back to the δύο ἰδίως ποιούς in line 2. Certainly, at the end of the passage Chrysippus does say that one of the two must perish *because* two peculiarly qualified individuals cannot occupy the same substrate. But this just reflects the Stoic diagnosis of the problem, and there is nothing to prevent a proponent of the Growing Argument from interpreting this stipulation in an entirely different way—that two (not necessarily peculiarly qualified) individuals cannot occupy the same substrate.

We can also take comfort in the fact that Chrysippus’ *reductio ad absurdum* still works, even if we assume that Dion and Theon are not peculiarly qualified individuals. When Dion’s foot is amputated, the Growing Argument requires that we call the amputee Theon, because we again have the same collection of flesh that we initially attached this name to. But, as Sedley suggests, there is a good *prima facie* reason to call the amputee Dion, since why would Theon be grieving over a foot he never had? Thus, the Growing Argument says that the amputee is Theon but common sense says that it is Dion. The amputee cannot be both Dion and Theon because of the principle that two individuals cannot share all of their material parts. So since Dion is alive, then Theon must be dead just as Chrysippus claims, and the Growing Argument is contradicted without making use of any propositions about peculiarly qualified individuals.

At first sight, it seems somewhat puzzling that the Academics would accept the stipulation that ‘two (not necessarily peculiarly qualified) individuals cannot occupy the same substrate’, since they might still have escaped the conclusion that Theon is dead by saying that the amputee is *both* Dion and Theon—that Dion and Theon are still numerically distinct individuals, but their spatio-temporal histories have converged. The stipulation that ‘two (not necessarily peculiarly qualified) individuals cannot occupy the same substrate’

is designed to rule out this possibility, and this is why *Chrysippus* would want it in the puzzle. But it is unsatisfying simply to claim, as Sedley does, that the Academics should accept it as common sense, because at this point in the argument, the Academics would have already been forced to accept that Theon and Dion have *some* of their material parts in common. And this is a strange thing to admit indeed, since Theon and Dion are not related as Siamese twins, for instance, but as part to whole. In this context—being already so far beyond the pale of common sense—it seems like a perfectly reasonable strategy for the Academics to bite the bullet and say that Dion and Theon can share *all* of their material parts, if by doing so they can forgo the additional embarrassment of admitting that Theon is dead.

I think that the Academics' acceptance of this principle makes more sense if we consider the fact that by arguing that matter is the sole principle of identity they seem to propose a *criterion* of identity. The relevant property of a criterion is that it allows one to make *unequivocal* judgements. An underlying assumption of the Growing Argument is that given a sufficiently precise specification of an object's material composition, one should be able to determine that object's identity unequivocally. If this were not the case, then some additional principle would be required and one could not hold that material composition is the sole principle of identity. The requirement that 'two individuals cannot occupy the same substrate' seems just to reflect the view that one should assign at most one identity to any collection of matter, which follows from viewing material composition as a criterion of identity. I tried to reflect this earlier by saying that the Growing Argument assumes identity to be a strict function of material composition, since when we call a relation a function, we typically mean that every element in its domain maps onto *at most* one element in its co-domain. Thus, the requirement that 'two individuals cannot occupy the same substrate' is simply a uniqueness requirement that says that if we assign two names to the same collection of matter, they both refer to *a single individual*.

I have argued that Chrysippus' puzzle is a *reductio ad absurdum* of the Growing Argument that can be understood without any reference to 'peculiarly qualified individuals'. Why, then, are peculiarly qualified individuals mentioned at all if the concept seems to serve no purpose in Chrysippus' *reductio ad absurdum*? I suspect that it is

because Philo is drawing from a summation of Chrysippus' attack on the Growing Argument that includes a Stoic diagnosis of why the argument fails—a summation in which Chrysippus first tells the Academics that the Growing Argument fixes on an apparently commonsensical, but none the less misguided, concept of personal identity. This, in Chrysippus' view, is really the root of all of the trouble. An entity must be 'peculiarly qualified' to count as an individual because, as we have seen, attempting to define an individual solely in terms of its matter does not work. Next in the summation, Chrysippus reminds us of the general principle that he 'established in advance'—that 'it is impossible for two peculiarly qualified individuals to occupy the same substance jointly'. Chrysippus has made it clear that the Growing Argument, so far from implying that growth and diminution are really generation and destruction, implies instead that growth results in a multiplicity of individuals that are related as parts to wholes. Moreover, even if we allow, *per impossibile* and just 'for the sake of argument', that Dion and Theon are peculiarly qualified individuals sharing the same matter, it will turn out that one of them must perish, not because an individual is identical to its matter, but because of a metaphysical limitation on peculiarly qualified individuals—that they cannot occupy the same matter jointly. It may be that, according to Chrysippus, having no material parts in common is a *necessary* condition for two entities to be numerically distinct. But at any rate, it is clear that for Chrysippus, material composition cannot be a *sufficient* criterion of identity.

The irony will not have been lost on Chrysippus that he had convicted the Academics of the very absurdity that they claimed the doctrine of peculiarly qualified individuals implies—that individuals consist of a multiplicity of entities. It is the *Academics*, rather, who have 'gone crazy in their arithmetic' by taking up the Growing Argument. Of course, the peculiarly qualified individual is *not* a multiplicity, but rather a single individual under different descriptions—as a substrate, and as a peculiarly qualified substrate. This is not the way that the man in the street thinks about identity, but the man in the street is often wrong. When the Stoic talks of 'common conceptions' he does not mean 'common opinions', and indeed, the common opinion that matter is the sole principle of identity is, on this showing, incoherent. The Academics set out to show that the very notion of personal identity is incoherent

by exposing a conflict between two venerable items of common opinion—that matter is the sole principle of identity and that identity is continuous over time. What Chrysippus' puzzle shows is that *one* of those common opinions is incoherent by itself, and this resolves the Academic aporia.

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