

ORIGINAL ARTICLE

Varieties of Avicennian arguments for the existence of God

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Abstract

In his *The Salvation* and *The Remarks and Admonitions*, Avicenna presents a well-known argument for the existence of God as a necessary being by itself. I will suggest, first of all, that the two pivotal notions employed in the argument, namely those of a necessary being by itself and a contingent being by itself, can be construed in different ways, leading to different versions of Avicenna's argument. I then turn to a specific version of the argument which seeks to show that there is at least one independently existing entity. This version constitutes the core of other versions of Avicenna's argument. Next, I shall explore how one might move from the existence of an independently existing entity to that of a necessary being by itself (variously construed). Finally, I will argue that the Avicennian argument for an independently existing entity suffers from a severe problem in that it fails to take account of the possibility of many-to-one causal relation.

Keywords: Avicenna's argument for the existence of God; necessary being by itself; contingent being by itself; ṣiddiqīn argument

Introduction

In a number of his books, Avicenna or Ibn Sīnā (970–1037) adduces arguments for the existence of God as a necessary being by itself (*wājib al-wujūd bi-l-dhāt*). Of these arguments, the most widely discussed is the one he presents in his *The Salvation* (*al-Najāt*) and *The Remarks and Admonitions* (*al-Ishārāt wa al-tanbihāt*). Their differences notwithstanding, the arguments offered in these two books are fundamentally the same, resting on the same principles.¹ In the Islamic philosophical tradition, the argument has sometimes been known as a version of the 'proof of the sincere' (*burhān al-ṣiddiqīn*), and generations of Muslim philosophers and theologians from different schools have offered arguments with an essentially similar structure.² The argument has also been influential in Western philosophy, particularly in the so-called 'argument from contingency'.³

Although Avicenna's argument has been rather extensively studied in the contemporary literature⁴, it still deserves a closer attention, if only because the two pivotal notions employed in the argument, namely the notions of a necessary being by itself and a contingent being by itself (*mumkin al-wujūd bi-l-dhāt*), have not been adequately delineated, and as a result, it is not obvious what premises are indeed presupposed by the argument

(in its different versions). In the present article I shall try, among other things, to fill this gap. Let me emphasize, however, that it is of secondary importance, for purposes of this study, to determine which of the possible interpretations of the notions involved in Avicenna's argument fits more closely with his words. Rather, I am primarily concerned with the question of which of the interpretations (if any) might enable us to reconstruct a cogent Avicennian argument for the existence of a necessary being by itself.

This is how the article proceeds. I will begin by pointing out that the two notions I just mentioned can be spelled out in a number of ways. In particular, the notion of a necessary being by itself can be construed in terms of four distinct, but closely tied, concepts: (i) an *independently necessary being* (a necessary being whose necessity does not depend on anything else), (ii) an *essentially necessary being* (a being to which necessary existence is essential), (iii) an *independent being* (a being whose existence does not depend on anything else), and (iv) an *essential being* (a being to which existence is essential). Accordingly, Avicenna's argument for God's existence can be formulated in terms of these four concepts, leading to four different versions of the argument.

Of these versions, I will then argue that the third one, namely the argument for an independent being, has the fewest assumptions, constituting the core of the other three versions. If this version is in fact plausible then the other versions can be achieved by adding Avicennian formulations of the so-called principle of sufficient reason. Notwithstanding this, I shall argue that the Avicennian argument for an independent being is flawed, due to its ignorance of the possibility of many-to-one causal relation, the kind of relation parts bear to the whole they compose. I conclude the article with a tentative suggestion for how the argument might be rectified.

Avicenna's dichotomy: necessary being by itself versus contingent being by itself

Very roughly, here is how Avicenna's argument proceeds. He begins with the intuitive premise that something exists, and then goes on to propound a crucial distinction (which I shall call 'Avicenna's dichotomy'⁵): every existing entity is either necessary by itself or contingent by itself.⁶ Next, Avicenna argues that the existence of a contingent being by itself entails the existence of a necessary being by itself. It follows that there is at least one necessary being by itself (versions of the argument will be presented below).⁷

The two pivotal concepts in this argument are 'necessary being by itself' and 'contingent being by itself', but what do they precisely mean? Setting aside the modifier 'by itself' for now, we will be left with two notions: 'necessary being' and 'contingent being', which are rather well-established concepts. With the concept of being or existence as well as modal concepts at our disposal, we might say that a necessary being is an entity that necessarily exists, and a contingent being is an entity that contingently exists (that is, while the entity exists, it might have not existed).⁸ However, complications arise when the modifier 'by itself' is introduced.⁹ *Prima facie* at least, Avicenna does not seem inclined to strip the notions of 'necessary being by itself' and 'contingent being by itself' of their modal overtones. Instead, he seeks to obtain the relevant notions just by adding constraints to the initial modal concepts.¹⁰ At least two interpretations of 'necessary being by itself' and 'contingent being by itself' (and for that matter, of Avicenna's dichotomy) might be gleaned from Avicenna's remarks. Furthermore, it is not obvious whether, in either of the interpretations, Avicenna wants to define a 'contingent being by itself' *via negativa*, namely, as what is not a necessary being by itself, or alternatively, he seeks to provide an independent definition of a contingent being by itself, in which case to say that what is not a necessary being by itself is a contingent being by itself will constitute a substantial claim. In what follows, I seek to clean up the conceptual background of the argument.

Before moving on to present the two possible interpretations of Avicenna's dichotomy, let us first consider his remarks in *The Salvation*:

The necessarily existent is the existent, which when assumed as not existing, an impossibility results. The contingently existent is the one that, when assumed as either existing or not existing, no impossibility results. The necessarily existent is the existent that *must be*, whereas the contingently existent is the one that has no 'must' about it in any way, whether in terms of its existence or nonexistence . . . Next, the necessarily existent may exist by itself or not by itself. What is necessarily existent by itself is that which because of itself and not because of anything else whatsoever [*lā li-shay'in ākhar*], an impossibility follows from assuming its nonexistence. (Avicenna (1985), 546)¹¹

This passage characterizes a necessary being by itself as an entity which, first, exists by necessity, and second, its necessary existence (i.e. its being such that assuming its non-existence results in an impossibility) is because of itself and *not because of anything else*. Now, the first interpretation of Avicenna's dichotomy takes the negative part of this characterization (namely: the necessary existence of a necessary being by itself is not because of anything else) as the key to the notion of a necessary being by itself. Moreover, on this interpretation, the notion of 'because' (or 'li' in Arabic) involved here should be construed in terms of causation (broadly understood), or alternatively, in terms of dependency.¹² This way, we arrive at what might be called the 'causal interpretation' of the notion of a necessary being by itself:

(D1) *x* is a necessary being by itself in the causal sense =_{def} (i) *x* necessarily exists and (ii) its necessary existence is not even partly caused by any other entity (or equivalently, (ii) its necessary existence does not even partly depend upon any other entity).¹³

Or in short, *x* is a necessary being by itself in the causal sense when it is an *independently necessary being*.

But what does it mean to say that the necessary existence of *x* is not even partly caused by anything else? We can recast this in the following way, though Avicenna himself did not put it that way. To say that *x* necessarily exists is to say that *x* exists in all possible worlds. Now if *x*'s existence is caused by something else at least in some possible worlds, then the necessary existence of *x* might be said to (at least partly) depend on something else. However, if *x*'s existence is not caused by anything else in any possible world, then the necessary existence of *x* is, so to speak, not even partly caused by anything else. The above definition, then, can be restated as follows:

(D2) *x* is a necessary being by itself in the causal sense =_{def} it is necessary both that (i) *x* exists and (ii) its existence is not even partly caused by any other entity (or equivalently, its existence does not even partly depend upon any other entity).

Or in short, *x* is a necessary being by itself in the causal sense when it is a *necessarily independent being*. To be sure, D2 is not Avicenna's own definition of 'a necessary being by itself' (even if the causal interpretation is granted). Nevertheless, given the standard possible worlds semantics, this definition can be taken as equivalent to the original one extracted from *The Salvation* passage, D1. That is to say, given the standard possible worlds semantics, the two notions *independently necessary being* and *necessarily independent being* are extensionally equivalent. I will exploit this equivalence in due course.

As we have seen, the causal interpretation is built on the negative component of Avicenna's characterization of a necessary being by itself. His characterization, nevertheless, has a positive component as well: the necessary existence of a necessary being by itself is *because of its own self*. One might suggest that this claim can also be causally construed, in which case we will come up with another definition:

(D3) x is a necessary being by itself in the causal sense =_{def} (i) x necessarily exists and (ii) its necessary existence is caused by itself.

But as pointed out before, the claim that the necessary existence of x is caused by x can be understood as saying that in all possible worlds, x 's existence is caused by x . However, the irreflexivity of causation will clearly render this impossible. Thus, D3 is not a felicitous definition in that it excludes the possibility of a necessary being by itself from the outset. At any rate, according to the first interpretation, whenever it is said that the necessary existence of a necessary being by itself is because of its own self (and the like), it should be negatively construed as saying that the being is not necessary through another entity.

So far, we have put forward a causal interpretation of the notion of a necessary being by itself: D1 can be straightforwardly extracted from the quoted Avicenna's passage, and besides, it fits well within his overall framework. But how should the notion of a contingent being by itself be construed on this interpretation? In order to trivially guarantee that every being is either a necessary being by itself or a contingent being by itself, we might stipulate that a contingent being by itself is a being that is not a necessary being by itself. This will yield the following:

(D4) x is a contingent being by itself in the causal sense =_{def} either it is possible that x does not exist or (if that is not possible) x 's necessary existence is caused by some other entity.¹⁴

Let us now turn to the second interpretation of Avicenna's distinction, which we might call the 'essential interpretation'. As we have seen, the first interpretation provides a negative construal of the modifier 'by itself' embedded in the notion of a 'necessary being by itself': something whose necessary existence is not caused by anything else. This is exactly where the second interpretation gets off the ground – it suggests that the modifier should not be negatively construed. In fact, when Avicenna says that a necessary being by itself is one whose necessary existence is because of its own self, what he means is that its necessary existence *is required by its essence*. In addition to the above quoted passage from *The Salvation*, there are other words by Avicenna which admit of such an interpretation. For instance, in *The Remarks and Admonitions*, Avicenna says:

Every being, if considered from the point of view of its essence and without consideration of other things, is found to be such that either existence necessarily belongs to it in itself or it does not. If existence belongs to it necessarily, then it is the truth in itself and that whose existence is necessary from itself. (Avicenna (1968b), 18)¹⁵

On the second interpretation, when it is said that 'the necessary existence of x is required by x 's essence', it should not be construed in causal terms in the sense that there is something in the world as x 's essence which causes x 's necessary existence. In contrast, it should be understood as saying that necessary existence is *essential* to x . Indeed, this interpretation rests upon an Aristotelian conception of essence according to which essence cannot be understood in modal terms – a conception maintained by the Aristotelian tradition (to which Avicenna belongs), and developed in the last decades by philosophers such

as Kit Fine.¹⁶ Following Fine (1995), we can take ‘it is essential to x that . . .’ as a sentential relativized operator, in which case we will come up with the following definition:

(D5) x is a necessary being by itself in the essential sense =_{def} it is essential to x that necessarily x exists.¹⁷

Given the essential interpretation, there are two options as how to define the notion of a ‘contingent being by itself’. The first one is to simply define it as what is not a necessary being by itself:

(D6) x is a contingent being by itself in the essential sense =_{def} it is not essential to x that necessarily x exists.

This way, it will be trivially guaranteed that any entity is either a necessary being by itself or a contingent being for itself. The second option for characterizing a ‘contingent being by itself’ is to spell it in line with the definition of a ‘necessary being by itself’ in D5:

(D7) x is a contingent being by itself in the essential sense =_{def} it is essential to x that x contingently exists.

As it happens, such construal might be gleaned from Avicenna’s remarks, too (for example, see Avicenna (2005), 30 and 32; *Idem* (1985), 547–548 [McGinnis and Reisman (2007), 212]; Avicenna (1985), 554; *Idem* (1968b), 18 and 61 [*Idem* (2014), 122 and 128]). But in this case, Avicenna’s dichotomy (given the essential interpretation) would fail to encompass the entire logical space, as it is logically possible for there to be an entity to which neither necessary existence nor contingent existence is essential. For this reason, under the essential interpretation, a ‘contingent being by itself’ is better to be defined merely as what is not a necessary being by itself, as is done in D6.¹⁸

I have up to this point articulated two main interpretations of the notion of a necessary being by itself: an *independently necessary being* (in terms of the causal interpretation) and an *essentially necessary being* (in terms of the essential interpretation). Now if we do away with the ‘necessity’ elements involved in these two concepts, we arrive at two weaker notions; that is, an *independent being* (a being whose existence is not even partly caused by any other entity) and an *essential being* (a being that essentially exists), respectively. We can then take a *dependent being* and an *inessential being* as the complements of these two notions, respectively. Interestingly, remarks by some post-Avicennian philosophers might suggest that by a ‘necessary being by itself’ they *sometimes* intend an independent being or, particularly, an essential being.¹⁹ We have hitherto arrived at four distinct concepts, all of which can be taken as expressing perfections of some sort within the framework of Avicenna’s philosophy.²⁰ Now what matters for purposes of this article is that the Avicennian argument for the existence of God (and in fact, the dichotomy that is pivotal to the argument) can be built upon any of these four concepts. In this way, we are indeed faced with four different arguments with different conclusions, which respectively seek to prove the existence of an independently necessary being, an essentially necessary being, an independent being, and an essential being.

As we shall see, however, of these four arguments, the one for an independent being draws on the fewest assumptions. In fact, this might be considered as the core Avicennian argument. All the other three versions of the argument can (without compromising their cogency) be formulated in ways in which they involve the argument for an independent being as their sub-argument. In the next section, I will present the argument for an

independent being, and then we will see how three other versions of the Avicennian argument can be obtained by adding certain premises to the core argument.

The Avicennian argument for an independent being explained

It should be noted that Avicenna has formally presented his argument in *The Salvation* and *The Remarks and Admonitions* as an argument for the existence of a *necessary being by itself*, rather than the existence of an *independent being*. One might, however, exploit ideas in this argument to provide an argument (henceforth, argument A) for the existence of an independent being, drawing on fewer assumptions. Before embarking on a formulation of the argument, let us pinpoint the main premises or presuppositions of the argument. The first premise of the argument says that something exists. This might be challenged only by extremely radical sceptics, and thus, we do not delve into it. Aside from this, the argument rests upon three main assumptions:

(P1) The principle of unrestricted mereological composition: for any group of entities (irrespective of whether they are finite or infinite), there is something which is composed only of the members of the group.²¹

(P2) The transfer principle:²² a cause of a whole is a cause of all of its parts.

This premise is deemed intuitive by Avicenna, who says that if something is to cause a whole, it should do so through causing its parts in the first place.²³

(P3) Irreflexivity of causation: nothing can be its own cause.

Now, with these premises at hand, argument A proceeds as follows.

Argument A

Admittedly, something exists. If it is independent, then QED. So as a *reductio* assumption, let us assume that everything in the world is dependent. Now, let T be the sum of all entities in the world, whether they are finite or infinite (P1 guarantees the existence of such a totality). T should be also a dependent being, as *ex hypothesi* there is nothing independent in the world. On the other hand, given the definition of a dependent being, T requires a cause C for its existence. Now we have three initial options: either (i) C is external to T in the sense that C or some of its parts are outside T, (ii) C is identical to T, or (iii) C is a part of T. The first option is impossible, as there is nothing outside T. So is the second option, as it is at odds with the irreflexivity of causation (P3). It follows that C is a part of T, but this is impossible, too. The reason being that a cause of a composite entity is a cause of all of its parts (P2), and thus C should be a cause of all parts of T. Now if C is part of T, it follows that C is its own cause, which is an impossibility (P3). Therefore, it is not the case that everything in the world is dependent –there is at least something independent.²⁴

As hinted by Avicenna, this kind of argumentation does not rely on the impossibility of circular and regressive causal chains. On the contrary, he suggests that the impossibility of regressive chains could be derived as a corollary of such an argument.²⁵ Also notice that argument A does not rely on the so-called ‘fallacy of composition’, namely the move from all parts of a composite entity having a property F to the conclusion that the composite entity also has F. In argument A, T is deemed to be a dependent entity *not* because all its

parts are dependent, but rather because *ex hypothesi* there is nothing independent in the world.

Moreover, some of Avicenna's commitments (made in the context of his argument for a necessary being by itself) are inessential to argument A. In particular, Avicenna maintains that every contingent being by itself requires a cause for its existence. Given that there are different ways in which the notion of a 'contingent being by itself' can be construed, this idea can come in a variety of forms (see the next section), none of which is needed for the above argument. What it appeals to is merely the assumption that existence of any dependent being requires a cause, which is indeed tautological. Avicenna also holds that a dependent being does not come to exist as long as its existence is not necessitated by its cause.²⁶ This assumption is not deployed in the above argument, either.²⁷ What is more, Avicenna suggests that an effect and its total cause should be 'synchronic', that is: (a) whenever an effect exists so does its total cause, and (b) whenever a total cause exists so does its effect.²⁸ Neither (a) nor (b) is needed for argument A to run, at least if we uphold eternalism.²⁹

From an independent being to a necessary being by itself

In the next section, Argument A will be critically examined, but throughout the present section, let us assume for simplicity's sake that it is successful. Here, we are concerned with a different question. As pointed out before, apart from the argument for an independent being, there are three other versions of the Avicennian argument, which seek to establish the existence of an independently necessary being, an essentially necessary being, and an essential being. It can be easily seen that by adding certain premises to Argument A, these three other versions of the argument will be obtained. The premises needed here are indeed different versions of the principle of sufficient reason (PSR, henceforth). Avicenna explicitly endorses a version of such a principle: every contingent being by itself requires a cause for its existence.³⁰ Considering the above interpretations of a 'contingent being by itself' enunciated in D4 and D6, this principle might be formulated in two different ways:

(P4) If x is not an independently necessary being, then x is a dependent being.

(P5) If x is not an essentially necessary being, then x is a dependent being.

Avicenna's argument for his own version of PSR will be considered later. For now, let us add P4 to argument A. Argument A (if successful) leads to the conclusion that there is an independent being. By *modus tollens*, this conclusion, conjoined with P4, entails that there is at least one independently necessary being. That is, adding P4 to an argument for an independent being yields an argument for an independently necessary being. In a similar vein, argument A conjoined with P5 results in the existence of at least one essentially necessary being.

In addition to P4 and P5, there is another version of PSR in the vicinity:

(P6) If x is not an essential being, then x is a dependent being.

Although this principle has not been explicitly stated by Avicenna, it has a distinct Avicennian tone, and is indeed indicated by certain passages in Avicenna's work.³¹ Argument A, conjoined with P6, will yield the existence of an essential being.

The premises of the four versions of the Avicennian argument can then be outlined as follows:

- P1 + P2 + P3 → there is an independent being.
 P1 + P2 + P3 + P4 → there is an independently necessary being.
 P1 + P2 + P3 + P5 → there is an essentially necessary being.
 P1 + P2 + P3 + P6 → there is an essential being.

Now the question is whether P4, P5, and P6 are plausible. This is an extensive question, requiring a lengthy treatment that should be left to another occasion. Let us, however, have a glance at these three principles, beginning with a succinct argument provided by Avicenna in *The Remarks and Admonitions* for his well-known statement that every contingent being by itself requires a cause:

That to which contingency belongs in essence does not come into existence by its essence, for, inasmuch as it is contingent, *its existence by its essence is not more appropriate than its nonexistence*. Thus, if its existence or nonexistence becomes more appropriate [than the other], that is because of the presence or absence of a certain thing [respectively]. It follows that the existence of every contingent thing is from another. (Avicenna (1968b), 19; emphasis mine)³²

Avicenna's idea seems to be as follows: if there is something to which neither existence nor nonexistence is essential (in Avicenna's own words, 'its existence by its essence is not more appropriate than its nonexistence'), then it requires a cause in order to come into existence. This is akin to certain versions of the principle of sufficient reason. Although Avicenna does not explicitly deploy concepts such as explanation or sufficient reason, his idea can be understood as follows: when something, *a*, exists, its existence requires an explanation. If existence is essential to *a*, then *a*'s existence is explained in terms of existence being essential to it. However, if existence is not essential to *a*, then its existence should be explained by recourse to something else that has caused it. This line of thought can be more generally stated (that is, without being restricted only to existence):

(P7) If (i) *Fa* and (ii) it is not essential to *a* that *Fa* then the fact that *Fa* requires a cause.

In any event, if Avicenna has something in line with P7 in mind when he defends his principle that every contingent being by itself requires a cause, then it will by itself provide a support only for P6, rather than either of the two possible interpretations of his principle (that is, P4 and P5).³³ Take P5, for instance. Suppose that the antecedent of P5 is true of something, *a*; that is, necessary existence is not essential to *a*. Now, in keeping with P7, one should say that since necessary existence is not essential to *a*, *a* needs a cause to acquire necessary existence. But it is not thereby shown that *a* needs a cause to acquire existence. Likewise, P4 is not entailed by P7 either.

Having said that, one might infer P4 and P5 from P6 by adding certain supplementary premises. To begin with, the following proposition seems quite plausible:

(P8) If it is essential for *x* that *x* exists then necessarily *x* exists.³⁴

On the other hand, both dependence and independence seem to be necessary properties of things; that is:

(P9) If *x* is (in)dependent, then necessarily if *x* exists then it is (in)dependent.

Now it can be easily seen that the conjunction of P6, P8, and P9 entails P4. Suppose x is an independent being (supposition of a conditional proof). Given P6 and by *modus tollens*, it follows that x essentially exists. In line with P8, however, if x essentially exists then it is a necessary being, in the sense that it exists in all possible worlds. On the other hand, since in the actual world x is an independent being, P9 implies that in every possible world in which x exists, x is independent. But as we have seen, x exists in all possible worlds. It will then follow that x exists and is independent in all possible worlds. Therefore, x is a necessarily independent being. We have seen, however, that definitions D1 and D2 are equivalent, that is, any necessarily independent being is an independently necessary being (and vice versa). Thus, x is an independently necessary being. On this account, we arrive at the following conditional:

If x is an independent being, then it is an independently necessary being,
which is a contrapositive of P4.

Let us now turn to P5. As we have seen, according to P8, if x essentially exists then it necessarily exists. Such necessary existence seems in turn to be essential to x ; that is:

P10. If it is essential to x that x exists, then it is essential to x that necessarily x exists.³⁵

And then it can be easily seen that the conjunction of P6 and P10 implies P5. Let us recap this section. Considerations adduced by Avicenna in support of the principle that every contingent being by itself requires a cause can (if successful) primarily lend support to the proposition that (P6) any independent being is an essential being. By adding further plausible assumptions, one can move from this to P4 and P5:

(P4) Any independent being is an independently necessary being.

(P5) Any independent being is an essentially necessary being.³⁶

Now, if argument A yields its conclusion, namely, that there is an independent being, then coupled with P4 and P5, it will also yield the existence of an independently necessary being and the existence of an essentially necessary being, respectively. That is, the existence of a necessary being by itself on both of its main interpretations will be substantiated. Now we are left with the question whether argument A is plausible in the first place. We shall grapple with this question in the next section.

The Avicennian argument for an independent being criticized

In this section, I provide an appraisal of argument A. One objection against argument A is that P1, namely the principle of universal composition, is itself controversial.³⁷ Granted, if this principle (and its proper substitutes, for that matter) is rejected, then argument A will be found wanting.³⁸ A discussion of this principle or its proper substitutes is outside the scope of this article. For the sake of discussion, however, I will take P1 for granted. Thus, I shall assume that for any number of entities, there is a mereological sum composed of, but not identical to, those entities.

Argument A seems to face a fundamental problem, however. As a preliminary, one should bear in mind that argument A aims to prove the existence of an entity whose existence is not dependent on anything else *in any respect*. It follows that the concept of

dependence involved in this argument is very comprehensive, encompassing all varieties of dependence, including an entity's dependence on its natural or nomological causes, its dependence on a supernatural cause by which it is brought about, its dependence as a whole on its parts, and the like.³⁹ It is precisely for this reason that, from the idea that a necessary being by itself is independent in all respects, Avicenna immediately infers that such a being has no part of any sort.⁴⁰ Accordingly, the notion of causation involved in the present context is a broad one according to which whenever an object is dependent upon another (in any sort of dependence including the dependence of a whole on its parts) the latter counts as a cause of the former. Argument A, thus, aspires to prove that there is something that has no causes whatsoever, in the most general sense of the term.⁴¹

Another preliminary point is that, in the Avicennian tradition, causation is distinguished into total (*tām̄ma*) and partial (*nāq̄iṣa*). Very roughly speaking, when something x on its own is sufficient for producing another thing y , x counts as a total cause of y . Moreover, if a group of entities (x_1, x_2, \dots, x_n) are collectively sufficient to bring about another entity y , and none of the entities in the group is irrelevant to the production of y , then the group will also count as a total cause of y . And each member of the group (which is relevant to, but is not sufficient for, the generation of y) is called a partial cause.⁴² While this characterization may be further sharpened, it is sufficient for our present purpose. The distinction between total and partial causes can be naturally applied to the broad sense of causation just mentioned.

To simplify matters further, in what follows I will merely focus on the notion of total causation, although nothing substantial hinges upon this choice.⁴³ Thus, in what follows, whenever I use the term 'causation' and its cognates, what I mean is total causation in the broad sense sketched above (unless otherwise specified).

Importantly, if we take causation in the broad sense in which parts count as (internal) causes of their wholes, it will have significant ramifications for the structure of the relation of total causation and its properties. To begin with, it then follows that the relation of total causation is not always a one-to-one relation; indeed, it might be a many-to-one relation as well. Let me elaborate upon this. Suppose that $a + b$ is the mereological sum of two simple entities, a and b (henceforth, '+' denotes the mereological summation). According to the idea of internal causation, $a + b$ is a dependent entity with a and b as its partial causes. Now a question arises as to which entity should be considered as the total cause of $a + b$. Needless to say, neither a nor b is a total cause of $a + b$, as each of them is merely one of its partial causes. Also, $a + b$ cannot be its own total cause, as it would violate the irreflexivity of causation. It seems, therefore, that there is no single entity (whether simple or composite) which can play the role of a total cause of $a + b$. But this seems extremely bewildering: how could a dependent entity with partial causes lack any total cause? The only way out of this predicament, I think, is to take the relation of total causation as a many-to-one relation. By so doing, we can straightforwardly say that a and b jointly bear a two-to-one (total) causal relation to $a + b$. This is not tantamount to saying that each of a and b is a total cause of $a + b$, or that $a + b$ is a total cause of itself, which are both obvious falsehoods.⁴⁴ This way, we can save the very intuitive idea (also present in the atmosphere of Avicenna's philosophy) that for any dependent object there is a single entity or a group of entities which play the role of total cause for that object.⁴⁵

It should be noted that cases involving a many-to-one causal relation are not confined to circumstances in which causes are parts of their effects. For instance, suppose that c is on its own a total cause of a , and d is on its own a total cause of b . As we have seen, a and b jointly bear a two-to-one (total) causal relation to $a + b$, but since total causation is transitive, one should say that c and d , too, jointly bear a two-to-one (total) causal relation to $a + b$, although neither c , nor d , is part of $a + b$.

Given the above remarks, total causation should in general count as a variably n -to-one relation (where n can be any cardinal number equal to or greater than one), in the sense that it is sometimes instantiated as a one-to-one relation, sometimes as a two-to-one relation, and so on.⁴⁶ In particular, when an infinite countable number of entities are composed to make up something like T , they all stand in an ω -to-one causal relation with T . Thus, total causation in its general form can be expressed by the following sentence schema: ' x_1, x_2, \dots jointly bear a total casual relation to y '. For the sake of simplicity, I will sometimes use the following sentence schema instead: '< x_1, x_2, \dots > causes y ', or I will say '< x_1, x_2, \dots > is a (total) cause of y '. (Let me emphasize that in my usage, '< x_1, x_2 >' does not designate a mereological sum or an ordered pair – it is not a referring term at all. Thus, '< x_1, x_2 > is a cause of y ' should not be taken to mean that an entity stands in a one-to-one total causal relation to y . Rather, this sentence is simply a conventional abbreviation of ' x_1 and x_2 jointly bear a two-to-one total casual relation to y '.) The number of x s can in principle be finite (of any magnitude) or infinite. If we only have one x , then the causal relation will be one-to-one, in which case we use the sentence schema ' x causes y ' instead of '< x > causes y ', referring to x as a singular (total) cause of y .⁴⁷

What is more, there is no guarantee that every dependent entity should have a singular cause. To state the idea differently, it is at least conceptually possible for there to be a dependent entity x such that there is no y in a one-to-one causal relation with x (this point will prove important, since one way to save argument A, as we shall see, is to assume that any dependent entity has a singular cause). For instance, suppose $G1$ and $G2$ are two independent entities. Their mereological sum, $G1 + G2$, will be also a dependent entity, but it goes without saying that it does not have any singular cause. Likewise, suppose $G1$ is a 's singular cause, and $G2$ is b 's singular cause. As might be expected, $a + b$ will also be a dependent entity. Here, although both < a, b > and < $G1, G2$ > are total causes of $a + b$, it has no singular (albeit composite) cause. In particular, $G1 + G2$ cannot be deemed a singular cause for $a + b$, since in this case, $G1 + G2$ would be a singular cause of the parts of $a + b$, owing to the intuitive idea that a singular cause of a whole is a singular cause of its parts (more on this later). However, it is implausible to say that $G1 + G2$ is a cause of a in that a 's cause is indeed $G1$, without $G2$ playing any role in the causation of a .⁴⁸ This might be illustrated through other examples as well: suppose a and b belong to two infinite distinct causal chains such that a is caused by a_1 , and a_1 is caused by a_2 , and so on *ad infinitum*. Similarly, b is caused by b_1 , and b_1 is caused by b_2 , and so on *ad infinitum*. Suppose further that there is no point at which the two chains meet. In this case, $a + b$ is a dependent entity, but it cannot conceivably have a singular cause.

In the previous paragraph, I provided several examples (involving two independent entities or two distinct infinite causal chains) to show that it is at least conceptually possible for a dependent entity to exist without any singular cause. One might protest that Avicenna does not believe in the possibility of two independent entities or two distinct infinite causal chains, as he affirms the unity of the necessary being by itself, in which every causal chain terminates. Thus, the objection proceeds, the examples in question cannot be appealed to, as their underlying assumptions are already rejected by Avicenna. But this objection is misplaced. For one thing, Avicenna's arguments for the impossibility of two independent beings are controversial on their own, and therefore, they cannot be taken for granted. More importantly, although Avicenna rejects the possibility of two infinite causal chains, his rejection is based, as a corollary, on his argument for the existence of a necessary being by itself,⁴⁹ namely, the very argument we are to assess. Thus, in the present dialectical context where the cogency of that argument is at issue, we are entitled to have recourse to the conceptual possibility of two infinite causal chains in order to hone our intuitions about causation. In other words, appealing to that argument to invalidate the above-mentioned example involving two infinite causal chains is a question-begging manoeuvre.

In any event, failure to recognize many-to-one causation gives rise to serious problems in cases where the effect is a composite entity. As a specific example of such problems, let us look at an interesting recent work by Zarepour (2022). He takes no account of the possibility of many-to-one causation, and as a consequence, he is compelled towards (what I view as) counterintuitive conclusions. For instance, he is committed to the idea that $G1 + G2$ is an independent being,⁵⁰ which, to use Zarepour's own words, 'is not conditional on anything'. But this seems counterintuitive, as $G1 + G2$ depends both on $G1$ and on $G2$ for its existence – at least in the context of Avicenna's philosophy as the backdrop of Zarepour's discussion, every whole is conditional on its parts. Interestingly, in a footnote, he finds it quite plausible that 'the existence of a whole should be explanatorily posterior to the existence of its parts', but ultimately he counts $G1 + G2$ as independent (Zarepour (2022), 41). The reason why he is compelled towards this position is his failure to take account of many-to-one causation. Obviously, $G1 + G2$ does not have any singular cause, but if the idea of many-to-one causation is recognized, then we might simply say that $G1$ and $G2$ jointly cause $G1 + G2$, in which case we can preserve the intuition that the whole depends on its parts.

There is another case that poses a problem for Zarepour: suppose G is independent, but a is a dependent entity caused by c . Zarepour argues that since a is a dependent entity, $G + a$ should also be said to be a dependent being. Now if it is dependent, then what is its cause? Zarepour has to introduce c as a cause of $G + a$, but in this case, as per the transfer principle, c should be a cause of $G + a$'s parts as well. However, we have assumed that G has no causes. To overcome the problem, Zarepour proposes a revision in the transfer principle: a cause of a whole is just a cause of those parts of it which are dependent, and thus, if a part is not dependent, it cannot be caused by what causes the whole (Zarepour (2022), 41–42). But this revision is not only *ad hoc*, but also counterintuitive. If c is not a cause of G , it cannot be a cause of $G + a$ either (at most, c might be said to be a partial cause of $G + a$). Here again, if the idea of many-to-one causation is recognized, we can easily introduce both $\langle G, a \rangle$ and $\langle G, c \rangle$ as causes of $G + a$, and at the same time, preserve the transfer principle in its original form, as far as singular causation is concerned (as we shall see below, the transfer principle is quite plausible in the case of singular causation).⁵¹

The upshot is that we should acknowledge that causation is in general a variably n -to-one relation. But how is all this relevant to the Avicennian argument for the existence of an independent being, namely argument A? As you remember, argument A rested upon three main premises: P1, P2, and P3. Of these, the latter two make claims about causation:

(P2) A cause of a composite entity is a cause of all of its parts.

(P3) Nothing can be its own causes.

Let us assume that these two principles are concerned with total causation. As we have seen, total causation comes in two forms: singular (one-to-one) and non-singular (many-to-one), but this discrimination was not taken account of in initial formulations of these principles. Now given this distinction, we are in a position to provide more specific readings of the above principles:

(P2*) If x is a singular cause of a composite entity y , then x is a singular cause of all of y 's parts.

(P2**) If $\langle x_1, x_2, \dots \rangle$ is a cause of a composite entity y , then $\langle x_1, x_2, \dots \rangle$ will be a cause of each part of y .

(P3*) x cannot be its own singular cause.

(P3**) $\langle x_1, x_2, \dots \rangle$ cannot be a cause of none of x_1, x_2, \dots

The first version of the two principles is a particular instance of their second versions. Both P3* and P3** are quite intuitive. Moreover, P3* has a great intuitive force. But it can be easily seen that P2** is subject to counterexamples. For instance, suppose that a and b are not causes of each other. Then, while $\langle a, b \rangle$ is a cause of $a + b$, it is not a cause of b , as a is totally irrelevant to the generation of b . For a similar reason, $\langle a, b \rangle$ is not a cause of a either. Moreover, if G_1 is a singular cause of a , and G_2 is a singular cause of b , then $\langle G_1, G_2 \rangle$ will be a total cause of $a + b$, but $\langle G_1, G_2 \rangle$ cannot be said to be a cause of a in that G_2 plays no role in the causation of a .

We are now in a position to see the main flaw in argument A. As you recall, this argument involves the *reductio* assumption that everything in the world is dependent, introducing T as the sum of all things in the world. Given that everything in the world is dependent, T should also count as dependent. And then from T 's dependence, it follows that a cause such as C is required. Here lies the main problem with the argument. As pointed out before, there is no guarantee that T should have a singular cause, and thus, from T 's being dependent it just follows that there is a $\langle C_1, C_2, \dots \rangle$ as a cause of T , where the number of C s can be one, more than one, or even infinite. As per the assumption of the argument, C s cannot be outside T , but we cannot make an appeal to P2* to show that C s cannot be part of T , since P2* is only concerned with one-to-one causation. Yes, the argument could go through were P2** plausible (as P2** implies that $\langle C_1, C_2, \dots \rangle$ is a total cause of all parts of T , including C_1, C_2, \dots , but it is impossible because of P3**). Unfortunately, however, P2** is problematic as we have seen. Put in a nutshell, in order for the argument to go through, we need either to assume that every dependent entity has a singular cause (let us refer to this as P11), or to endorse P2**, but neither option is plausible.

The above objection can be further elucidated by noting that argument A cannot exclude either of the following circumstances:

(I) External Cause Regress: the circumstance in which the world merely consists of an infinite number of simple entities (and their combinations), where all these simple entities are in an infinite causal chain, in a way that a_1 is caused by a_2 , a_2 is caused by a_3 , and so on *ad infinitum*. In this circumstance, all entities in the world, whether simple or compound, are dependent. In particular, the sum of all things in the world, that is $a_1 + a_2 + a_3 + \dots$ is also dependent. This sum (let us call it T) does not have any singular cause; instead, it is caused by $\langle a_1, a_2, a_3, \dots \rangle$.

(II) Internal Cause Regress: the circumstance in which everything in the world has parts, and those parts have parts in turn, and so on *ad infinitum* (we can add to the description of the situation that nothing has an external cause). In this circumstance, too, everything in the world will be dependent.

The conjunction of P1, P2*, P3*, and P3** is compatible with both (I) and (II). Of course, if one espouses either of P2** or P11 (namely: every dependent entity has a singular cause) one could exclude both circumstances, but as we have seen, both of those principles are problematic.⁵² Moreover, of the various versions of PSR which might be gleaned from Avicenna's remarks (that is, P4, P5, P6 and P7), none can fulfil the argument. Of course, one might draw on instances of the so-called 'Composition Principle' (according to

which, the properties of the parts will sum to the same properties of the whole) to exclude (I). Take the following two principles, for example:

(P12) If all parts of a composite entity have an external cause then the composite entity will also have an external cause.

(P13) If all parts of a composite entity have a singular cause then the composite entity will also have a singular cause.

As is well known, however, the principle of composition is in its general form subject to obvious counterexamples. Of course, there might be intuitive instances of them, but P12 and P13 can hardly count as intuitive. In particular, P13 has a counterexample: if G_1 is a singular cause of a , and G_2 is a singular cause of b , then all parts of $a + b$ have singular causes, without $a + b$ having a singular cause.⁵³ I conclude that the core of Avicennian arguments – that is, the argument for an independent being – faces a fundamental problem.

Concluding remarks

Avicenna's argument for God's existence can be formulated in terms of four distinct, but closely tied, concepts: an independently necessary being, an essentially necessary being, an independent being, and an essential being. The argument for an independent being has the fewest assumptions, constituting the nub of other three arguments. We have seen how, by adding Avicennian versions of PSR, one might move from the existence of an independently existing entity to that of a necessary being by itself (variously construed). Notwithstanding this, the argument for an independent being suffers from a fundamental problem.

Perhaps, though, the argument could be remedied by deploying (alleged) intuitions associated with the notion of explanation, instead of simply focusing on the notion of causation and its properties. After all, one might suggest that there is something inconvenient, intuitively speaking, in both (I) and (II): regressive explanations do not provide us with satisfactory answers to the question why the chain of entities in (I) and (II) have come to exist as a whole. Nevertheless, such an intuition is not captured by any of the principles and premises offered by Avicenna. That said, the intuition in question is no stranger to the general context of Avicenna's philosophy. As you recall, his line of reasoning for the principle that every contingent being by itself requires a cause is essentially (though not explicitly) underpinned by an intuition that has to do with *explanation*. Of course, the versions of PSR that might be gleaned from Avicenna's remarks (that is, P4, P5, P6, and P7) are too weak to enable argument A to deliver the goods. But perhaps stronger versions of PSR might be attempted *within the context of Avicenna's philosophy* that might do the job. Such a possibility must be explored in another study.⁵⁴

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Notes

1. Avicenna (1968b), 18–28 [Avicenna (2014), 122–124]; Avicenna (1985), 566–576 [McGinnis and Reisman (2007), 214–216]. Here and below, translations of the cited passages will sometimes be cited in brackets. For another version of Avicenna's argument for a necessary being by itself, see Avicenna (2005), 257–273.
2. Suhrawardi ((1993), 386–387), al-Jī ((2011), 266–268), al-Taftāzānī ((1998), 15–18), and Mullā Ṣadrā ((1981), 35–36) are just some cases in point. For variations of the *ṣiddiqīn* argument in Islamic philosophy see, for example, Morvarid (2008) and Morvarid (2021).

3. For the reception of Avicenna's argument in the mediaeval western philosophy see, for example, Davidson (1987, ch. 12) and Druart (2002).
4. For studies on versions of Avicenna's argument for the existence of God see, for example, Morewedge (1970); *Idem* (1980); Hourani (1972); Marmura (1980); Davidson (1987), chs 9 and 11; Goodman (1992), ch. 2; Mayer (2001); Legenhausen (2005); McGinnis (2010), ch. 6; McGinnis (2011); De Haan (2016); Byrne (2019); and Zarepour (2022); *Idem* (MS).
5. Although such a dichotomy has its roots in earlier philosophers like al-Fārābī and even Aristotle, I have chosen to call it 'Avicenna's dichotomy' as it is mostly associated with Avicenna, who is perhaps the first philosopher to base an argument for the existence of God on this dichotomy. For the historical context of Avicenna's meta-physical framework in general, and his dichotomy in particular, see Wisnovsky (2003).
6. Instead of the term '*bi-l-dhāt*' (by itself, or more literally, by the essence), Avicenna sometimes uses other terms such as *bi-dhātih* (by its essence), *min dhātih* (from its essence), *bi-i'tibār dhātih* (by virtue of its essence), *fi nafsih* (in itself), and *min nafsih* (from itself). It seems, however, that this battery of various modifiers is intended to express the same thing, which I shall discuss below. Furthermore, in the majority of contemporary English literature on Avicenna, '*mumkin al-wujūd*' is translated as 'possible being', instead of 'contingent being'. However, given Avicenna's construal of *mumkin al-wujūd*, as we shall see in what follows, I definitely prefer 'contingent being'.
7. Having thus established that there is at least one necessary being by itself, Avicenna proceeds to argue that such a being is unique. Moreover, he seeks to prove certain properties (including simplicity, omniscience, omnipotence, goodness, etc.) for the necessary being by itself (see Avicenna (1968b), 30–66; Avicenna (1985), 551–557 and 570–593. See also: Avicenna (2005), 273–298. In this article, I shall not concern myself with these issues. For a contemporary discussion, see Adamson (2013).
8. Avicenna's remarks in *The Salvation* ((1985), 546 [McGinnis and Reisman (2007), 211]) clearly shows that he has a modal understanding of both notions of 'necessary being' and 'contingent being' when used without the modifier 'by itself'.
9. One complication which I will not go over in this article is that some of Avicenna's remarks suggest that the necessary being by essence or by itself (*wājib al-wujūd bi-l-dhāt*) has existence (*wujūd*) but not an essence (*dhāt*). See, for example, McGinnis (2010), 168–172 and Bertolacci (2012).
10. But see note 20.
11. The translation is, with modifications, from McGinnis and Reisman (2007), 211. For similar characterizations of a necessary being by itself, see Avicenna (2005), 29–30; Avicenna (1968b), 18 [Avicenna (2014), 122].
12. The notion of causation employed in the first interpretation of Avicenna's dichotomy is a wide conception of the term according to which whenever an entity depends in its existence on another one the latter counts as a cause of the former. This notion, thus, encompasses not only the dependence of an entity upon its four well-known Aristotelian causes, but also any other kinds of dependence like the dependence of a whole upon its part. Such a broad notion of causation has been widely appealed to in the Avicennian tradition, though perhaps not under the title of *illīyyah* (the standard Arabic term for 'causation'). Instead, the property of *being caused* in the broad sense in question has been usually expressed, in the Avicennian tradition, by a variety of phrases like: being posterior (*muta'akkhir*) to, being dependent (*mutawaqqif*) upon, being constituted (*mutaqawwim*) by, being in virtue of, being because of, and the like. At any rate, the rationale for articulating the first interpretation of Avicenna's dichotomy in terms of the broad notion of dependence/causation is, besides the textual hints like the connotation of '*li*' in the above-quoted passage, that one goal of Avicenna's argument is to prove that there is something whose (necessary) existence lacks any kind of dependence on any other entity. We shall return to this point in later on. I am thankful to an anonymous referee for pressing me on this.
13. When an entity *x* depends for its existence on a number of entities including *y*, we say that *x* is partly caused by (or partly depends upon) *y*.
14. On this interpretation of a 'contingent being by itself' it is not obvious what role is played by the modifier 'by itself'. If 'contingent being by itself' is to be construed in keeping with 'necessary being by itself', then the modifier in the former should be negatively understood too; that is, a contingent being by itself is a contingent being whose contingency is not caused by anything else. On the other hand, for something to be contingent is for it to exist in some possible worlds, but not others. In this way, a contingent being by itself should be said to be something whose existence (in worlds in which it exists) or nonexistence (in those in which it does not exist) does not depend on anything other than itself. But clearly this is not what Avicenna intends by 'a contingent being by itself', as he explicitly holds that both existence and nonexistence of a contingent being by itself is due to another entity (see, for example, Avicenna (2005), 31; Avicenna (1985), 548–549; Avicenna (1968b), 19). This shows that the causal interpretation fails to fit completely with Avicenna's remarks on the matter. As we shall see, however, the second interpretation also suffers from some similar problems. At any rate, my primary concern being philosophical rather than exegetical, I need not make a decision as to which of the two interpretations at

hand (or any other interpretation, for that matter) best fits Avicenna's passages. At any rate, in the post-Avicennian philosophical tradition, too, sometimes the two notions of a necessary being by itself and a contingent being by itself are construed in terms of causal concepts, although not exactly in the way in which the first interpretation above is articulated (see note 19). It is also noteworthy that, as Davidson (1987, 291) points out, the roots of Avicenna's dichotomy might be traced back to Aristotle's *Metaphysics* V. 5: 'some things owe their necessity to something other than themselves; others do not, while they are the source of necessity in other things' (Aristotle (1995), 3450). Aristotle's remarks here are rather close to the causal interpretation provided above.

15. The translation is from Avicenna (2014), 122. For similar remarks, see references cited in note 11.

16. Avicenna's endorsement of such a conception of essence is evidenced, among other things, by the distinction he draws between *essentials* and *inseparable accidents* (*al-a'rād al-lāzimah*). On Avicenna's view, inseparable accidents are supposed to be necessary, but non-essential, properties of an object. See, for example, Avicenna (1985), 16–17; Avicenna (1968a), 47–48. For Fine's view see, for example, Fine (1994) and Fine (1995). Cf. Morvarid (2019).

17. Correia (2007) argues that the Aristotelian-Finean notion of essence can be captured by the so-called 'local modalities' (cf. Morvarid (2018)). Accordingly, the essential interpretation of the notion of a necessary being by itself can be restated as follows:

x is a necessary existent by itself =_{def} it is locally necessary that it is globally necessary that x exists.

18. It seems that Avicenna simply ignores the logical possibility just mentioned. That is, he is seemingly committed to the assumption that (*) if necessary existence is not essential to an entity then contingent existence is essential to it (see the references just cited in the text). But not only (*) is logically unjustified, it is inconsistent with another thesis endorsed by Avicenna, namely necessitism, according to which every existing entity necessarily exists (see references cited in note 26). For, if there is something to which necessary existence is not essential then (*) has it that contingency is essential to it, and so, it is contingent, contrary to what necessitism requires. Even so, fortunately neither (*) nor the choice between D6 and D7 is crucial to Avicenna's argument for the existence of a necessary being by itself. An anonymous referee of the journal has interestingly suggested that given the essential interpretation, 'a necessary being by itself' can be construed as an entity to which existence (and not necessary existence) is essential. Accordingly, we can say that a 'contingent being by itself' is an entity to which existence (and not necessary existence) is not essential. This way, the suggestion proceeds, the dichotomy will cover the entire logical space. I concede that such a suggestion could be a cogent interpretation of the dichotomy, especially as it is understood in the post-Avicennian literature (see the text below and note 20). What I want to emphasize, however, is that it does not fit well with Avicenna's own official characterization of the two notions. For example, in the passage just quoted from *The Remarks and Admonitions*, Avicenna takes a necessary being by itself as an entity which 'if considered from the point of view of its essence and without consideration of other things, . . . existence necessarily belongs to it in itself' (my emphasis).

19. For instance, post-Avicennian philosophers often assert that a contingent being by itself is neutral, in its essence, with respect to both existence and nonexistence. That is, neither existence, nor nonexistence, is essential to a contingent being by itself. This is more explicitly stated by Fakhr al-Dīn al-Rāzī ((2005), 346): 'a contingent being is interpreted as what does not essentially require existence or nonexistence' (my emphasis). This might be understood as saying that 'a contingent being by itself' simply means that to which neither existence, nor nonexistence, is essential. Now if the notion of a necessary being by itself is to be the complement of that of a contingent being by itself, then we should perforce say that 'necessary being by itself' means that to which existence is essential. The idea that a contingent being by itself is neutral, in its essence, with respect to both existence and nonexistence has its roots in Avicenna's own work. See, for example, Avicenna (1968b), 19 (this passage will be discussed in the text) and commentaries by Naṣīr al-Dīn al-Ṭūsī and Qūṭb al-Dīn al-Rāzī under Avicenna's passage.

As an example of a philosopher who construes a necessary being by itself as an independent being, the following passage by al-Ghazālī is remarkable: 'The expressions "the possible" and "the necessary" are vague expressions, unless by "the necessary" is intended that whose existence has no cause and by "the possible" that whose existence has a cause' (al-Ghazālī (2000), 81). Also see Mullā Ṣadrā (1981), 35–36.

20. As we shall see in due course, on certain assumptions, these four concepts can be shown to be coextensive. But since some of these assumptions are by no means trivial, the four concepts are better distinguished at the outset.

21. This principle, sometimes called '(diachronic) mereological universalism', is advocated by a number of contemporary philosophers, including Lewis (1986), Armstrong (1997), Sider (2001), and Fine (1999). For criticisms of this principle, see van Inwagen (1990), Markosian (2004), Comesaña (2008), and Saenz (2018) among others.

22. The name is due to Zarepour (2022 and manuscript).

23. See Avicenna (1985), 568 [McGinnis and Reisman (2007), 215]; Avicenna (1968b), 25–26 [Avicenna (2014), 122].
24. It should be noted that the difference between argument A and Avicenna's original arguments in *The Salvation* and *The Remarks and Admonitions* is not merely that in argument A, 'a necessary being by itself' is replaced by 'an independent being'. Argument A has been considerably simplified in other ways as well. These differences are not crucial to the purposes of this article. For formulations closer to Avicenna's text, see Zarepour (2022).
25. See Avicenna (1985), 568–569 [McGinnis and Reisman (2007), 215]; Avicenna (1968b), 27–28 [Avicenna (2014), 124].
26. See, for example, Avicenna (2005), 31–32; Avicenna (1985), 548–549 [McGinnis and Reisman (2007), 212–213]; Avicenna (1968b), 19 [Avicenna (2014), 122].
27. This can be taken as an advantage of argument A. For, this assumption culminates in necessitism, which is unwelcome for a number of reasons, including its incompatibility with divine as well as creaturely libertarian free will.
28. See, for example, Avicenna (2005), 201–203.
29. If presentism is true, however, the situation becomes more complicated, but I shall not go through the issue here. I just want to note that even if we espouse presentism, the second part of the synchronicity assumption (namely: (b) whenever a total cause exists so does its effect) is not required for Argument A. And it is desirable indeed to do away with (b) as it has given rise to two notorious problems in Islamic philosophy: the problem of the relation between incipient (*hādith*) entities and the eternal (*qadīm*), and the problem of the relation between changing entities and the unchangeable. For a useful survey of these two problems in the history of Islamic philosophy, see 'Ubūdiyyat (2006), 346–382. It is also noteworthy that, as Zarepour (2022, manuscript) has indicated, if the first part of the synchronicity assumption (namely: (a) whenever an effect exists so does its total cause) is adopted, then argument A will require not P1, but a weaker principle called 'synchronic mereological universalism': for any group of entities that simultaneously exist, there is something which is the mereological sum of all members of that group.
30. See the references cited in note 32. Avicenna even holds a stronger thesis: every contingent being by itself requires a *necessitating* cause for its existence. As pointed out, none of the four versions of the Avicennian argument depends on this stronger thesis.
31. As we shall see, the argument provided by Avicenna for the principle that every contingent being by itself requires a cause supports P6 at best.
32. The translation is, with modifications, from Avicenna (2014), 123. For similar arguments, see Avicenna (2005), 31–32; Avicenna (1985), 548–549 [McGinnis and Reisman (2007), 212].
33. It goes beyond the scope of this article to examine the arguments that might be gleaned from Avicenna's passages here and there for P7, or a particular instance thereof, P6. Avicenna's version of PSR is discussed in Richardson (2014) and Morvarid (2021).
34. P8 is not only very intuitive, but also is maintained by some systems of logic of essence. For instance, see Fine, (1995), esp. page 247; Correia (2007).
35. P10 also holds in a system of logic of essence devised by Fine (1995). Aside from this, a non-formal support of P10 is as follows: according to P8, if existence is essential to *x*, then *x* exists by necessity. People like Fine (1994) believe, however, that every necessity arises from something's essence. Now the question is: what is the entity from whose essence the necessity of *x*'s existence arises? The most natural alternative here is to say that it is required by *x*'s own essence. Accordingly, the necessity of *x*'s existence is essential to *x*.
36. For the sake of simplicity, I have contraposed the original formulation of P4, P5, and P6. Notice that the conjunction of these three theses and the plausible assumption that any essential being is an independent being (the converse of P6) implies that the four aforementioned Avicennian concepts are coextensive.
37. See the references in footnote 21. As pointed out in note 29, if we hold the assumption that whenever an effect exists so does its total cause, then not P1, but only a weaker version thereof, namely synchronic mereological universalism, will be required for argument A to go through. In addition, Zarepour (manuscript) interestingly suggests that premise P1 can be further weakened. What is needed for the argument, according to him, is the so-called 'Chain-Composition Principle' (conjoined with certain plausible assumptions): for any causally connected chain of beings, there is something which is the mereological sum of all members of that chain. It will go beyond the scope of this article to examine Zarepour's proposal, but I want to just point out that his formulation of Avicenna's argument with the weakened versions of P1 will still be vulnerable to the objection to be raised against argument A in the text below.
38. It is noteworthy that some Muslim philosophers have also challenged Avicenna's argument by way of rejecting P1. For example, see Mullā Ṣadrā (2007b), 30–32.
39. According to the standard conception of identity, a mereological sum is not identical with any of its proper parts, and thus, the dependence of a whole on its parts is an instance of dependence upon *another* entity. Avicenna, too, shares such a conception (see the references cited in the next footnote). After all, he takes

parts to be prior to the whole, while nothing can be prior to itself. I thank an anonymous referee of this journal for pressing me to clarify this.

40. For instance, see Avicenna (1985), 551–552 [McGinnis and Reisman (2007), 214]; Avicenna (1968b), 54 [Avicenna (2014), 127]. One might wonder what will become of the Avicennian style of reasoning if we deploy a narrower conception of causation, according to which only external causes of an entity count as its causes. Let us express this notion by ‘causation*’. Accordingly, say an entity is independent* if and only if it lacks any cause*. Now, it can be easily seen that P1 without the aid of other premises entails that there is an independent* being: according to P1, there is an entity which is the mereological sum of all beings, but that entity lacks any cause*. So far so good. But this kind of reasoning falls well short of yielding a theologically significant result, as it cannot show that there is a *simple* (partless) independent* entity. I thank Mohammad Saleh Zarepour for raising this issue.

41. See note 12.

42. For instance, see Qutb al-Dīn al-Rāzī’s commentary on Avicenna’s passage in Avicenna (1968b), 11. Although the relevance constraint on the elements of total causes is not normally made explicit in Avicenna’s corpus, it not only fits very well within the Avicennian metaphysical framework, but also enjoys a considerable intuitive support. Thus, it can be fairly taken for granted in our present discussion.

43. As we shall see in note 47, the notion of partial causation is in principle definable in terms of the notion of total causation, as are the notions of independent being and dependent being. Furthermore, arguments A can be formulated merely by drawing on the notion of total causation. This allows us to focus only on the concept of total causation in the following discussion, without jeopardizing its main conclusions.

44. In this respect, the relation of total causation is akin to that of exemplification. The relation of exemplification (if there is such a relation) is sometimes a two-to-one relation, as when, for example, x and y jointly bear that relation to brotherhood. But then it does not make any sense to say that each of x and y individually exemplifies brotherhood, nor does it make sense to say that $x + y$ as a single entity exemplifies brotherhood.

45. The phenomenon of two-to-one total causation to which I have alluded is completely different from that of causal overdetermination. The former involves one total causal relation with three relata, two of which (the partial causes) jointly bear that relation to the third one (the effect). Thus, none of the two partial causes is sufficient on its own to bring about the effect. But in overdetermination cases, we have two distinct total causes each of which on its own is sufficient to produce a common effect. That is, in such cases two one-to-one total causal relations are instantiated, each of them connecting one of the total causes to the common effect. Therefore, although many Muslim philosophers have rejected the possibility of causal overdetermination, their arguments, even if successful, do not bear on the possibility of two-to-one total causal relation (see, for example, Mullā Ṣadrā (2007a), 210). I thank an anonymous referee for calling my attention to this point.

46. Here, again, the relation of total causation is analogous to that of exemplification, as it is sometimes a one-to-one relation, such as when x exemplifies humanity; sometimes a two-to-one relation, such as when x and y jointly exemplify brotherhood, and so on.

47. Given the above remarks, the intuitive notion of partial causation can in its most general form be defined as follows:

a is a partial cause of b = there are x_1, x_2, \dots such that (i) $\langle x_1, x_2, \dots \rangle$ causes b , and (ii) a is proper part of $x_1 + x_2 + \dots$

As you recall, an ‘independent being’ is defined as a being without any sort of (total or partial) cause. According to the above definition of partial causation, however, if something does not have a total cause, then it does not have a partial cause, and vice versa. In this light, an independent being can be defined as an entity that does not have any total cause (either singular or non-singular). Analogously, a dependent entity can be defined as an entity that has a total cause (either singular or non-singular). These definitions are equivalent to the original definitions of dependent and independent beings.

48. In general, the fact that $\langle x_1, x_2, \dots \rangle$ is a cause of y does not entail that $x_1 + x_2 + \dots$ is a cause of y . In a similar vein, when x and y jointly exemplify brotherhood, it makes no sense to say that $x + y$ as a singular entity exemplifies brotherhood.

49. See note 25.

50. It should be noted that in this case, as well as other cases that will be discussed, Zarepour uses the terms ‘necessary in itself’ and ‘possible in itself’ instead of ‘independent being’ and ‘dependent being’. But the heart of his idea, as well as its problems, can be articulated in terms of ‘independence’ and ‘dependence’.

51. Aside from this, Zarepour (2022, 42) is committed to the idea that if c causes a , and d causes b , then $c + d$ will cause $a + b$. According to the transfer principle, it follows that $c + d$ causes both a and b . This is not true in general, however: a is *ex hypothesi* caused by c , with d playing no role in the causation of a . We cannot thus say that $c + d$ is a cause of a . A more accurate characterization of this situation is to say that $\langle c, d \rangle$ is a cause of $a + b$. Moreover,

Zarepour's assumptions do not seem to be internally coherent. For instance, suppose that G is an independent entity that serves as the cause of x_1 , and x_1 is a cause of x_2 , and x_2 is a cause of x_3 , and eventually, x_3 is a cause of x_4 . Now according to the above assumptions:

- (1) x_2 is a cause of $G + x_3$ (since x_2 is a cause of x_3).
- (2) $G + x_3$ is a cause of $x_1 + x_4$ (since, on the one hand, G is a cause of x_1 , and on the other hand, x_3 is a cause of x_4).
- (3) x_2 is a cause of $x_1 + x_4$ (from 2 and 3, and the transitivity of causation).
- (4) x_2 is the cause of x_1 (from 3, and the revised transfer principle: a cause of a whole is a cause of its dependent parts).
- (5) x_1 is a cause of x_2 (assumption).
- (6) x_1 is its own cause (from 4 and 5, and the transitivity of causation).

However, it is obvious that nothing can be its own cause.

52. Davidson (1987, 304–307 and 370–375) has raised an essentially similar objection to Avicenna's argument. He also traces it to al-Ghazālī (2000, 81). Davidson points to the circumstances (I) and (II) as well, noting that Avicenna's argument cannot exclude them. Nevertheless, he fails to articulate adequately the main point of the objection. After mounting the objection, he considers a possible reply on behalf of Avicenna's to rule out (I): In this situation,

each of the possibly existent components [of T] would be part of the cause of the existence of the totality; and since the cause of a whole is primarily the cause of the components making up the whole, each of the possibly existent components would be part of the cause of the existence of itself.

But, the reply goes on, 'a possibly existent being cannot be even part of the cause of the existence of itself. (Davidson (1987), 305–306). Let us call this the thesis of 'Strong Irreflexivity'.

Davidson concedes that this reply would be satisfactory had Strong Irreflexivity been well supported. His problem with the reply is merely that Avicenna has not provided us with any reason why we should endorse Strong Irreflexivity. Contrary to Davidson, however, Strong Irreflexivity seems utterly plausible, but it cannot remedy the main defect of Avicenna's argument. Davidson mistakenly assumes that there is such an entity as *the cause* of T and that each component of T is a part of that cause. Nevertheless, we have just seen that it is not guaranteed that T has a singular cause (let alone that each component of T is a part of that entity). It is also noteworthy that in *The Remarks and Admonitions* Avicenna tries to exclude something like (I) as follows: parts of T cannot be said to be the cause of T since, on the one hand, each part on its own cannot be the total cause of T, and on the other hand, parts in their totality are nothing but T, which cannot be the cause of T (Avicenna (1968b), 22–25 [Avicenna (2014), 123]). It is obvious, however, that Avicenna has overlooked the main option: it is parts that jointly cause T, rather than their mereological sum.

53. A possible way to exclude both (I) and (II) is to adhere to the following principle:

(P14) Every dependent entity has a *minimal cause* (very roughly, we say $\langle c_1, c_2, c_3, \dots \rangle$ is a minimal cause of y if and only if when one or more cs are eliminated from $\langle c_1, c_2, c_3, \dots \rangle$, what remains is not a total cause of y).

Obviously in (I), T lacks a minimal cause. We have seen that $\langle a_1, a_2, a_3, \dots \rangle$ is a total cause of T. Now since every a_i is caused by a_{i+1} , then given the transitivity of causation, $\langle a_2, a_3, a_4, \dots \rangle$ is also a total cause of T. In the same way, $\langle a_3, a_4, a_5, \dots \rangle$ is a total cause of T, and so on. Therefore, T does not have any minimal cause. So, if P14 is satisfactory, it might be deployed to exclude (I) and in a similar way (II). The idea behind P15 is likely to be the contention that if something dependent does not have a minimal cause, then its existence will lack an *ultimate explanation*, whereas the existence of every entity demands such an explanation. Consonant with this line of thought, I will suggest that perhaps the only way to fulfil argument A might well be the recourse to versions of PSR formulated in terms of the notion of explanation.

54. For recent attempts to construct arguments for the existence of God by deploying various versions of PSR, see Koons (1997), Gale and Pruss (1999), and Almeida (2018). Pruss (1998 and 2006) and Koons (2008) are germane, too.

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