Ergo AN OPEN ACCESS JOURNAL OF PHILOSOPHY

The Contingency of Actuality

MARTIN GLAZIER
Scripps College

Most philosophers accept *Necessity of Actuality*: whenever 'actually p' is true, it is true with metaphysical necessity. The logic that results from rejecting this principle has recently been studied by Glazier and Krämer (2024); the present paper develops its philosophical foundations. Although Necessity of Actuality may seem to be required by actuality's role in comparing what is with what might have been, I argue that the principle is false and that such comparisons are in good standing even without the principle. The rejection of Necessity of Actuality reopens the following question: for which p is 'actually p' metaphysically possible? I propose an answer that appeals to the idea that actuality has an essence, and I explore some hypotheses about what this essence might be.

There seems hardly any difference at all between saying that snow is white and saying that snow is actually white. But although the former statement is as unproblematic as it gets, statements like the latter have long bedeviled philosophers.

The devil in question is the notion of actuality. For most philosophers, this unassuming notion is in fact possessed of an occult power: the power to transform contingency into necessity. They have attributed this power to actuality because they have taken the notion to obey two principles. The first is *Actuality of Truth*: whenever p is true, so is 'actually p.' The second is *Necessity of Actuality*: whenever 'actually p' is true, it is true with metaphysical necessity. And so if p is true—even if it is only contingently true—'actually p' is necessary.

Actuality of Truth is wholly innocuous. But despite its widespread acceptance, Necessity of Actuality has troubled philosophers from the very beginning. Even Crossley and Humberstone (1977: 17), whose pioneering logic of actuality validates the principle, acknowledged that it "may indeed, if read literally, strike one as counterintuitive." This paper argues that these misgivings were correct: Necessity of Actuality is false (§2). Although it may appear to be presupposed by

Contact: Martin Glazier <mglazier@scrippscollege.edu>

https://doi.org/10.3998/ergo.7969

our practice of comparing what is the case with what might have been or must be the case, I will show that this appearance is misleading and that our practice of modal comparison is in good standing even without the principle (§3).

In contemplating the rejection of the principle it is not unreasonable to feel a certain trepidation. The logic of necessity, possibility and actuality is well understood under the assumption of Necessity of Actuality. Without that assumption, what will we take the logic of these notions to be? Fear not: this question has been answered by Glazier and Krämer (2024).

Once Necessity of Actuality is rejected, new questions open up. Under the assumption of Necessity of Actuality, the answer to the question of when 'actually *p*' is possible is simple: it is possible iff it is true. But once this assumption is dropped, what will the answer be? I will suggest that it will appeal to the idea that actuality has an essence, and I will consider some hypotheses about what this essence might be (§4).

1. The Necessity of Actuality

Before arguing against Necessity of Actuality, we should try to understand why it has tempted so many. To do that we need to get clear on the notion of actuality that the principle involves.

Tradition distinguishes two uses of 'actually.'[1] In its *rhetorical* use, 'actually' signals that some surprising or unanticipated claim is in play, as in "Despite the name, a light year is actually a unit of distance." This use I set aside.

Necessity of Actuality involves the other, *non-rhetorical* use of 'actually.' The notion expressed by this use is not a technical notion. It is rather an ordinary, intuitive notion, one figuring in everyday thought and talk. Its central uses are in *modal comparison*: comparing what is the case with what might have been or must be the case. For example, we may say that the weather could have been nicer than it actually is. Or again, we may say that the chemical formula of any substance must be what it actually is. The literature is replete with further examples:

> If Max ate less, he would be thinner than he actually is. (Lewis 1970: 185)

> It is possible that a man who is actually sitting down should be standing. (Crossley and Humberstone 1977: 11)

> There could be something which actually doesn't exist. (Hodes 1984: 27)

1. Prominent representatives of the tradition include Lewis (1970) and Crossley and Humberstone (1977). The traditional distinction is not universally accepted and has been questioned by a number of philosophers, such as Soames (2007), Yalcin (2015), and Mackay (2017). These challenges are beyond the scope of this paper.

Why might one think this notion of actuality obeys Necessity of Actuality?

One argument appeals to possible worlds. We begin by assuming a space of such worlds, one of which is called 'actual.' We take a statement to be necessary just in case it is true at all of the worlds. We assume that, given any particular world w, what is true at w does not itself vary from world to world. Thus if, at the actual world, p is true, it will be true at *every* world that, at the actual world, p is true. Defining 'actually p' to mean that p is true at the actual world, we arrive at the conclusion that whenever 'actually p' is true, it is true necessarily.

One can of course stipulate whatever definitions one likes, and if one defines 'actually p' in this way, then it may be the case that 'actually p' will be necessarily true if true at all. But our concern in this paper is not with this technical notion but with the ordinary notion of actuality, the one that figures in everyday modal comparison (and which motivated the study of the technical notion, as the context of the above three quotations shows). The argument from possible worlds does not establish Necessity of Actuality for the ordinary notion.

All the same, there is a seemingly compelling argument that the ordinary notion of actuality obeys Necessity of Actuality (though see §3). For it appears to be presupposed by our practice of modal comparison. In a modal comparison, such as "the weather could have been nicer than it actually is," we use the notion of actuality to compare what *could* have been the case with what *is* the case. And we do this by bringing the notion of actuality within the scope of a modal operator.

But why does that allow us to perform the intended comparison? Part of the answer is that given Actuality of Truth (and its equally innocuous converse Truth of Actuality), what *is* the case exactly matches what is actually the case. But unless we are also given Necessity of Actuality, we seem to lack any guarantee that this match will be preserved once we move within the scope of a modal operator. When we launch ourselves out into modal space by saying "the weather could have been …," we need to be sure that, however different the weather out there may be, the *actual* weather remains the same.[2] And without Necessity of Actuality, it seems, we have no such guarantee.

Of course, Necessity of Actuality is presumably false if 'actually' is given its rhetorical use. For in the rhetorical sense, to say that actually p is substantively no different from simply saying that p, and so Necessity of Actuality will amount to the claim that every truth is necessary. But we have set this use of 'actually' aside. Necessity of Actuality, as we understand it, involves the non-rhetorical use.

2. I take this metaphor from Glazier and Krämer (2024).

One might protest that the notion of actuality is superfluous, since an appeal to it can always be eliminated. One well-known eliminative strategy involves "pulling" a quantifier outside the scope of a modal operator. For example, suppose we start with the actuality-involving sentence "it could have been that someone who's actually rich was poor instead" ($\Diamond\exists x\,(@Rx \wedge Px)$). We can pull the quantifier 'someone' outside the scope of the possibility operator to obtain the actuality-free sentence "someone rich is such that she could have been poor instead" ($\exists x\,(Rx \wedge \Diamond Px)$). There is a clear sense in which these two sentences say the same thing.

But there are familiar sentences that are more resistant to this strategy. Suppose we are contemplating the possibility of a global catastrophe that returns all of humanity to a subsistence level and so say, "it could have been that *everyone* who's actually rich was poor instead" ($\Diamond\forall x\,(@Rx \rightarrow Px)$). If we try to quantifier-pull, we arrive at "everyone rich is such that she could have been poor instead" ($\forall x\,(Rx \rightarrow \Diamond Px)$). That sentence says only that for each rich person, there is a possibility of her individually experiencing hard times. But *that* could be true even if a global return to subsistence level were impossible, and so our two sentences do not say the same thing.[3]

In any event, this entire line of thought is beside the point. Even if there is some way to eliminate all appeal to actuality while still saying everything we want to say, the actuality-involving claims are perfectly intelligible—and indeed, are often more natural than their actuality-free replacements. There is no reason not to accept the truth of modal comparisons involving actuality. But once that is accepted, Necessity of Actuality appears inevitable.

2. The Contingency of Actuality

But despite its seeming inevitability, Necessity of Actuality can and should be rejected.

My defense of this claim is in three parts. I begin with a plea to the reader to approach the principle with an open mind, for it is at least not obviously true (§2.1). I next offer a theoretical case against the principle, showing that it generates pathological counterexamples to otherwise unproblematic platitudes and thereby frustrates antecedently reasonable attempts at theory construction (§§2.2–2.4). Finally, I argue that the principle is inconsistent with the fact that actuality changes over time (§2.5).

3. Although the quantifier-pulling strategy can be made to work in this case if we allow plural devices, further challenges may be mounted. See Bricker (1989) and Cresswell (1990: ch. 6) for discussion.

2.1. Necessitarianism

Necessitarianism is the view that things could not have been any different: whenever p is true, p is necessary. Actuality necessitarianism is the view that things could not have been actually any different: whenever p is true, 'actually p' is necessary. The latter view follows from Necessity of Actuality together with the uncontroversial Actuality of Truth.

There is a certain philosophical orientation against whose backdrop actuality necessitarianism is natural, even mandatory. This orientation we may call *absolute* necessitarianism. The absolute necessitarian sees the world as an implacable massif. Like the mountaineer's Everest, the world is simply *there* and the thought of its being any different seems faintly risible.[4] Such a philosopher will happily embrace actuality necessitarianism. Indeed, she will embrace necessitarianism simpliciter. (Actuality necessitarianism follows straightforwardly from the latter given Actuality of Truth.)

Most of us, however, are not absolute necessitarians. We see the world as brimming with contingency, more Niagara than Denali. And this widespread contingentist picture is not just in tension with necessitarianism simpliciter. It seems also to be in tension with actuality necessitarianism. With apologies to Lewis (1996: 550), if you are a contented actuality necessitarian, I implore you to be honest, be naive, consider it afresh. Do you really think things could not have been actually any different?

It does not help to concede that actuality necessitarianism is false when 'actually' is given its rhetorical use. For even when 'actually' is given its non-rhetorical use, the view still seems in tension with the contingentist picture.

There may, of course, be thought to be a technical notion of actuality for which actuality necessitarianism holds, such as the notion we mentioned in §1 only to set aside. But this should in no way make us more sanguine about embracing actuality necessitarianism for the ordinary notion of actuality.

I do not say that these considerations establish on their own that Necessity of Actuality is false. But I would submit that they at least support reopening the question of its truth. There is room to deny the principle—room that, as the remainder of this section will show, we sorely need.

2.2. Moral Responsibility

In the early 1980s Peter van Inwagen (1980; 1983) developed the "direct argument" for the incompatibility of moral responsibility with determinism. It follows

4. Absolute necessitarianism can trace its roots at least to Spinoza; Karofsky (2021) is a more recent defender.

from determinism, van Inwagen reasoned, that the way the world is now is entailed by the way it was in the distant past (before there were any people) together with the laws of nature. And he argued that no one could be morally responsible for the fact that this entailment holds, on the grounds that no one could be morally responsible for *any* necessary truth. Reasoning that no one could be responsible for the distant past or for the laws of nature either, van Inwagen concluded that, given determinism, no one is responsible for the way the world is now.

The direct argument has exercised many philosophers since van Inwagen proposed it.[5] But almost none of them have taken the locus of philosophical action to be the seemingly reasonable principle that no one can be morally responsible for a necessary truth.[6]

I say *almost* none of them. If Necessity of Actuality is true, the principle faces a peculiar form of counterexample due to Stephen Kearns (2011). Kearns writes:

> Let us say that Stephen murders someone. Furthermore, it is completely uncontroversial that Stephen is morally responsible for the fact that he murders someone … This being so, it is also clear that he is responsible for the fact that he *actually* murders someone. However, the fact that he actually murders someone [obtains necessarily]. (309)

Kearns's inference from "Stephen murders someone" to "necessarily, Stephen actually murders someone" relies on Necessity of Actuality (together with Actuality of Truth). Thus if Necessity of Actuality is granted, we are led to Kearns's conclusion that Stephen is morally responsible for a necessary truth. We must therefore reject van Inwagen's principle (and with it the direct argument).

But if Necessity of Actuality is jettisoned instead, then Kearns's argument may be dismissed as a distraction (of a clever and interesting sort, to be sure) and the debate over the compatibility of determinism and responsibility may resume.

One might argue that the rejection of Necessity of Actuality is not enough. After all, we can simply stipulate that 'actually,' in Kearns's argument, refers not to the ordinary notion of actuality but to the technical notion mentioned in §1. Surely, it might be insisted, the technical notion obeys Necessity of Actuality, and so even if the ordinary notion does not, van Inwagen's principle is still in trouble.

But the argument, so understood, is far less convincing. For it now involves an inference from Stephen's responsibility for murdering to his responsibility for actually murdering—in the *technical* sense of 'actually.' As soon as 'actually'

5. See, e.g., Warfield (1996), McKenna (2008), and Hermes (2013).
6. Kearns (2011: 308) says the principle enjoys a "universal consensus."

is stipulated to have a technical sense, the intuitive support for this inference vanishes. And it is not clear that it can be supported in any other way.[7]

2.3. Knowledge

At various points in this paper, we have appealed without much comment to the principle Actuality of Truth and to its converse Truth of Actuality. But once Necessity of Actuality is accepted these seemingly reasonable appeals are revealed to harbor a secret error. For it becomes possible to argue that certain propositions of the form '*p* iff actually *p*' are in fact unknowable. The argument is due to David Chalmers (2011):

> [Let] '*A*,' '*E*,' '*K*,' '$\Box$,' '$\Diamond$' stand for 'Actually,' 'Someone entertains,' 'Someone knows,' 'Necessarily' and 'Possibly,' while '$\rightarrow$' and '$\leftrightarrow$' are the material conditional and biconditional. In addition, q is any (entertainable and expressible) proposition that no one actually entertains, while r is $\neg Eq$, the proposition that no one entertains q.
>
> (1) Ar
>
> (2) $Ar \rightarrow \Box Ar$
>
> (3) $\Box(K(r \leftrightarrow Ar) \rightarrow (r \leftrightarrow Ar))$
>
> (4) $\Box(r \rightarrow \neg K(r \leftrightarrow Ar))$
>
> (5) $\neg\Diamond K(r \leftrightarrow Ar)$
>
> … The conclusion [(5)] follows from the premisses [(1)–(4)] by classical logic and the weak modal logic K … From (3) and (4), one can derive $\Box(K(r \leftrightarrow Ar) \rightarrow ((r \leftrightarrow Ar) \& \neg r))$. From (1) and (2), one can derive $\Box(K(r \leftrightarrow Ar) \rightarrow Ar)$. From these two claims one can derive $\Box(K(r \leftrightarrow Ar) \rightarrow (r \& \neg r))$, from which the conclusion follows. (411)

Premises (1), (3) and (4) are plausible. Premise (1), after all, requires only that there be some proposition that no one actually entertains. Premise (3) is supported by the principle that knowledge entails truth, and premise (4) is supported by the thought that knowing $r \leftrightarrow Ar$ requires entertaining r and thus q, and so requires r to be false.

The remaining premise (2), however, is an instance of Necessity of Actuality. And so if that principle is granted, we are led by Chalmers's reasoning to the conclusion (5) that $r \leftrightarrow Ar$ is simply unknowable.

This conclusion might be tolerable if the argument is stipulated to involve a technical notion of actuality which obeys Necessity of Actuality (cf. Chalmers

7. See Turner and Capes (2018) and Lampert and Merlussi (2021) for discussion.

2011: 418–419). But if it is read as involving the ordinary notion of actuality, then we would do much better to respond by abandoning Necessity of Actuality instead.[8]

2.4. Ability

Most of us would feel secure in the assumption that we are unable to do the impossible. But once we admit Necessity of Actuality, a curious kind of counterexample arises due to Jack Spencer (2017: 478–479).[9]

Spencer's argument works like this. Suppose that for some proposition p, the following holds. First, p is true. Second, p is maximally contingent: were things different in any way at all, p would be false. Third, a certain person S does not know p—but, fourth, S is *able* to know p.

From these suppositions it may be argued that S is able to do something impossible. Since S does not in fact know p, in order for S to know p, the world would have to be different in some way—namely, with respect to which propositions S knows. But since p is true but maximally contingent, that difference would render p false, and so unknown (by S, or by anyone). It is therefore impossible for S to know p—and yet we have supposed that S is nonetheless able to know p.

This argument establishes that we are able to do the impossible only if there is some proposition for which its four suppositions hold. But is there? Spencer says that there is: it is the proposition that the actual world is actual. But is he right?

Consider the supposition that this proposition is maximally contingent. Whether this holds depends on how "the actual world is actual" is understood. As Spencer points out, it cannot be understood to mean "the world that is actualized is actualized," since *that* is tautological. (One might think to understand it to mean "w is actualized," where w is a certain possible world, but although this is maximally contingent, it is not knowable by any ordinary person.) Spencer recommends that "the actual world is actual" instead be understood to mean "the actually actualized world is actualized."[10]

---

8. I have encountered the objection that, in a counterfactual world in which $r \leftrightarrow Ar$ is known, r must be false (as noted in the text) and so Ar must be false too. Yet in fact Ar is true. But this is only a problem given Necessity of Actuality. If that principle is false then there is no tension at all between Ar's truth and its counterfactual falsity.

9. Spencer offers other counterexamples as well, but they rest on controversial presuppositions: in some cases, compatibilism about free will; in others, a plenitudinous ontology. See Nguyen (2020) for further discussion of Spencer's cases.

10. Spencer (2017: 479, fn). He considers another reading on which "the actual world is actual" involves a singular thought about the actual world but confesses some doubt as to whether we can entertain such thoughts.

But why think that proposition is maximally contingent? It can only be because, if things were different in any way at all, then although which world is actualized would be different, which world is *actually* actualized would not be. And *that* must be because, if some world w is actually actualized, then it is necessary that w is actually actualized. This is an instance of Necessity of Actuality. Reject that principle, and you avoid Spencer's counterexample.

If actuality is understood in a technical sense, there might be another way out. For S's ability to know Spencer's maximally contingent proposition might be thought to rest on her ability to know the proposition 'p iff actually p' for any p. And as we saw in §2.3, there is perhaps room to deny that S has the latter ability—given a *technical* notion of actuality. But given the ordinary notion, an odd and disorienting revision of our thinking about ability and possibility appears forced upon us once we have Necessity of Actuality. We are better off without it.

2.5. Change

Actuality changes over time: it has been otherwise than it is. Since it has already been otherwise, it must be possible for it to be otherwise. And so Necessity of Actuality is false.[11]

Let us state this argument more carefully. Consider lucky Horatio, who goes from rags to riches overnight. Although today he is rich, yesterday he was poor. And by the same token, although today he is *actually* rich, yesterday he was *actually* poor.

We regiment these claims in a way familiar from discussions of tense logic (e.g. Prior 1957). A present-tensed verb is to be taken as in itself temporally neutral, as conveying no temporal information. Of course, if one says "Horatio is rich," one does thereby convey information about the present moment. But the tense logician's thought is that such information flows not from the present-tensed sentence itself but from the fact that the sentence is uttered at the present moment. And if the sentence is prefixed with an operator like 'it used to be the case that' or 'it will be the case that,' then its utterance will no longer convey information about the present moment but about a past or future moment instead. In itself, the sentence is neutral.

The temporally neutral use of the present tense is no mere logician's contrivance. Consider the sentence "it is no longer the case that Horatio is poor, although it used to be." The sentence is elliptical: it used to be what? The answer

11. This argument is also discussed in Glazier and Krämer (2024); this section draws on that discussion. A related argument is discussed by Dorr and Goodman (2020: 642–643).

is that it used to be the case that Horatio is poor. But do not be misled by the use of the present tense here. What the sentence says is simply that Horatio is not poor now but was poor in the past. It does not say, incoherently, that although Horatio is not poor now, at some point in the past it was the case that he *is* poor now. The true, non-incoherent reading of the sentence requires the temporally neutral use of the present tense. In what follows we use the present tense in exactly this neutral way.

Employing this regimentation, we argue as follows:

(6) Actually, Horatio is rich. (Premise).

(7) It used to be the case that, actually, Horatio is poor. (Premise)

(8) It is possible for it to be the case that, actually, Horatio is poor. (From 7)

(9) Actually, Horatio is rich, and it is possible for it to be the case that, actually, Horatio is poor. (From 6 and 8)

The conclusion (9) entails the falsity of Necessity of Actuality.

The argument employs two inferences: from (7) to (8) and from (6) and (8) to (9). The latter is simple conjunction introduction and can hardly be doubted. And the former is also very plausible.[12] For it rests on the compelling thought that the past is possible: the way the world *was* is a possible way for it to be. After all, if something has already managed to be the case, then there is nothing about the world, or about it, to bar it from being the case. And so how could it fail to be possible?

The only objection with any plausibility targets, not the inferences of the argument, but its premises. Of course, our rags-to-riches tale clearly supports (6). But a philosopher acutely sensitive to logical form may wonder whether it truly supports the premise

(7) It used to be the case that, actually, Horatio is poor

as opposed to the extremely similar non-premise

(10) Actually, it used to be the case that Horatio is poor.

One might ask: why accept (7) rather than (10)?

A natural response is that there is no reason to choose between the two. Granted, (7) and (10) are different claims. Still, the difference between them appears vanishingly small. Horatio's poverty is part of how things actually were yesterday, and that is surely a reason to accept at least one of these claims. But since the difference between the two seems negligible, it is a reason to accept both.

12. It is also supported by Dorr and Goodman's (2020) perpetuity principle.

I can think of only one way to resist this response. One might try to insist that the ordinary notion of actuality is *temporally rigid* in the following sense: no matter what, it pulls us back to the present moment. When a sentence is prefixed with 'actually,' that ensures that its moment of evaluation is the present moment, even if the sentence lies within the scope of a tense operator. If actuality is temporally rigid, then it is true that (10) actually, it used to be the case that Horatio is poor. ('Actually' puts us in the present, but then 'used to be' takes us back to yesterday, when Horatio was poor.) But it is not true that (7) it used to be the case that, actually, Horatio is poor. ('Used to be' takes us back to yesterday, but then 'actually' pulls us back to the present, when Horatio is rich.)

We can show that actuality is not temporally rigid, and so that the objection fails, by careful attention to the cases in which our judgments about actuality are clearest: cases of modal comparison.

Consider the vicissitudes of ecology. It is possible for there to be fewer birds than there actually are (in the ordinary sense of 'actually') and similarly for toads, cacti, mushrooms, and on and on. Not for dinosaurs, though, since they are extinct. Nevertheless, what is true of birds, toads, and so on *used* to be true of dinosaurs: it used to be possible for there to be fewer of them than there actually are. This claim can be true only if the ordinary notion of actuality is temporally nonrigid—only if it does not invariably pull us back to the present moment.

Or consider a second case, one deriving from the well-known example sentence

(11) Possibly, everyone who is actually rich is poor instead ($\Diamond\forall x\,(@Rx \to Px)$)

discussed in §1.

Ray Bradbury's 1953 novel *Fahrenheit 451* imagined a dystopian America in which all books were to be burned. But this policy was perhaps too extreme even for a society bent on destroying knowledge and culture. Faded or disintegrating books could have been spared; only the *legible* books would have to be burned.

Although the possibility of mass censorship is still with us today, it could not take the form Bradbury envisioned. After all, electronic books cannot be burned. It is therefore not true that

(12) Possibly, every book that is actually legible is ablaze instead. ($\Diamond\forall x\,(@Lx \to Ax)$)

Here (12), like (11), is to be read as involving the ordinary notion of actuality.

Although (12) is no longer true, back in Bradbury's day, it was. That is:

(13) It used to be the case that possibly, every book that is actually legible is ablaze instead (USED-TO-BE ($\Diamond\forall x\,(@Lx \to Ax)$)).

(Remember that we give the present tense a temporally neutral reading.) Clearly, (13) is true only if actuality is temporally nonrigid. Its truth requires us to pick out the actually legible books of 1953, not those of today. And the relevant reading of (13) is one on which it involves the same, ordinary notion of actuality that is involved in (12).

Like "possibly, everyone who is actually rich is poor instead," the comparison (13) is not easily purged of reference to actuality. For example, the quantifier-pulling strategy of §1 will not work. If we try to employ it, we will arrive at "it used to be the case that every legible book is such that it is possibly ablaze instead" (USED-TO-BE $(\forall x\,(Lx \rightarrow \Diamond Ax))$). But that says only that for each past legible book, there was a possibility of its being individually committed to the flames. And that could be true even if mass book burning were impossible.

We might try to come up with another way to understand the claim that the *Fahrenheit 451* scenario was possible, one that requires no reference to actuality. But what is wrong with (13)? It is perfectly intelligible, and it would be ad hoc to deny it merely to avoid the conclusion that actuality is not temporally rigid.

If the ordinary notion of actuality is indeed temporally nonrigid, then the objection to our argument vanishes. The rags-to-riches tale supports (7) just as much as it supports (10), and so Necessity of Actuality is false.

3. Possibility Given Actuality

But if Necessity of Actuality is false, where does that leave our ordinary practice of modal comparison, which (as we saw in §1) appears to presuppose that Necessity of Actuality is true?

There is indeed a real worry here. Consider an ordinary modal comparison like "the weather could have been nicer than it actually is," and suppose that the actual weather is not very nice—cold and windy, say. Given the context, the intended meaning of our comparative claim is that the weather could have been nicer than cold and windy—warm and sunny, say. But if Necessity of Actuality is false, it seems that the real meaning of the comparative claim must be something else, something unintended. For the claim would be true even if the weather could not have been any nicer than cold and windy, so long as the *actual* weather could have at the same time been even worse—freezing rain, say.

The problem stems from the fact that without Necessity of Actuality, we seem to lack any guarantee that, as we traverse modal space, what is actually the case never changes. In the weather case, for example, we have no guarantee that the actual weather will remain constant across modal space. And this seems to vitiate our attempt at modal comparison.

But this problem is only apparent. For the guarantee of constancy we need can also be provided without Necessity of Actuality by imposing a restriction on the form of modality involved in ordinary comparisons.

An analogy will help make the idea clear. Suppose we are planning to drive from Miami to Houston. We will need to consider the various possible routes we might take. And as we consider these different possibilities we need to be sure that we hold fixed what roads there are. For example, we do not want to consider a possible route which goes via a hypothetical new superbridge spanning the Gulf of Mexico. Since there is in fact no such bridge, it should turn out that every possible route we might take stays on the mainland.

One way to guarantee this would be to adopt Necessity of Roads, the claim that it is metaphysically necessary what roads there are. But of course Necessity of Roads is false. Fortunately, the guarantee can be, and is, provided in another way. The form of possibility involved in the relevant notion of possible route is a restricted form of possibility, one that holds fixed what roads there are. And so when we consider the various possible routes we might take, the road network remains constant across all of them in the way we require.

It is for analogous reasons that our practice of modal comparison is in good standing despite the falsity of Necessity of Actuality. That practice involves restricted forms of necessity and possibility which hold fixed what is actually true. In the most straightforward case, these restricted forms are *necessity given actuality* and *possibility given actuality*, which may be characterized as follows. Let A be the conjunction of all true propositions of the form 'actually p.' Then q is necessary given actuality iff it is metaphysically necessary that if A then q. And q is possible given actuality iff $q \wedge A$ is metaphysically possible.[13] (Of course, we often hold other things fixed as well, such as the course of history or the laws of nature, and so use forms of modality that are even more restricted than these. What matters is that in modal comparison we hold fixed, at the very least, what is actually true.)[14]

Return now to the claim that the weather could have been nicer than it actually is. If 'could have' expresses possibility given actuality (or some even more restricted form of possibility), then the unintended truth conditions considered above are blocked, and the intended meaning is secured.

13. This simplified characterization ignores what happens when one of these restricted modal operators occurs within the scope of another modal or tense operator. In that case, in familiar fashion, the conjuncts of A will be, not the propositions of the form 'actually p' which are true, but the propositions of that form which are true at the world or moment fixed by the outer operator. See Glazier and Krämer (2024) for the technical details.

14. To be clear, my claim is that *ordinary* modal comparison involves necessity and possibility given actuality or even more restricted forms of modality (though a qualification is provided by Glazier and Krämer 2024: fn 8). In more philosophical contexts we are free to use any form of modality we please, though to avoid error we must bear in mind that Necessity of Actuality is false.

4. Possibility for Actuality

If the argument of §2 is correct, then philosophers have been laboring under a blinkered conception of what is possible, one that brooks no contingency in what is actually the case. Once this restriction is abandoned, what new possibilities open up? What is the true range of the metaphysically possible?[15]

To make this question tractable, we will confine ourselves to propositions of the form 'actually p.' Let us say that p is *possible for actuality* just in case 'actually p' is metaphysically possible. We may then ask: which propositions are possible for actuality?

Given Actuality of Truth, if p is true, so is 'actually p.' And it follows from the modal axiom T ($\Box p \rightarrow p$) that, if 'actually p' is true, it is metaphysically possible. This establishes a lower bound on the range of the possibilities for actuality: it contains, at least, all of the true propositions.

But it does not contain *only* the true propositions. For suppose otherwise. Then from 'actually p' we can infer the falsity of 'actually not-p' and so, by our supposition, the impossibility of 'actually not-p.' The uncontroversial equivalence of 'actually not-p' with 'not-actually p' and the duality of necessity and possibility together then entail that 'actually p' is necessary. We therefore arrive at Necessity of Actuality, which we have argued is false.

The possibilities for actuality, then, include some falsehoods. But they do not include any metaphysical impossibilities. For as a matter of metaphysical necessity, the way things actually are is a possible way for them to be. And so if 'actually p' is metaphysically possible, then 'possibly p' is too—and so by the modal axiom 4 ($\Box p \rightarrow \Box\Box p$), p itself is metaphysically possible. This establishes an upper bound on the range of the possibilities for actuality: it contains, at most, all of the metaphysically possible propositions.

But it is plausible that this upper bound is not in fact reached. There seem to be propositions which are metaphysically possible without being possible for actuality. Consider this red tomato, for instance. It is metaphysically possible that the tomato is non-red though actually red ($\neg R \wedge @R$). But plausibly it is not metaphysically possible that *actually*, the tomato is non-red but actually red ($@(\neg R \wedge @R)$).[16] After all, nothing we have said in this paper provides any grounds for doubting the standard assumptions (i) $@(p \wedge q) \equiv @p \wedge @q$, (ii) $@\neg p \equiv \neg @p$,

15. This section primarily focuses on philosophical rather than technical matters. The latter are the subject of Glazier and Krämer (2024), which develops the logic of necessity, possibility, and actuality that results from dropping the assumption of Necessity of Actuality.

16. This marks one important point of difference between our view and that of Davis (2015). Although Davis agrees with us that Necessity of Actuality should be rejected, he wishes to uphold the necessity of 'p iff actually p.' We do not. For further comparison of our view with others in the literature, see Glazier and Krämer (2024).

and (iii) $@@p \equiv @p$.[17] Applying these in sequence to $@(\neg R \wedge @R)$ yields the contradiction $\neg @R \wedge @R$.

If the foregoing is correct, then the range of the possibilities for actuality lies somewhere strictly between the two bounds just mentioned. The possibilities for actuality outrun the true propositions, but they do not go so far as to exhaust the metaphysically possible propositions. So where exactly does the boundary lie?

I submit that the answer will require us to take seriously the idea that actuality itself has an essence or nature in the sense of Fine (1994). A proposition p is possible for actuality, I suggest, just in case (a) p is metaphysically possible and (b) the nature of actuality does not rule out p's being actually true.

To understand this suggestion properly, we need to distinguish some different (non-rhetorical) uses of the term 'actuality,' both of which have already occurred in this paper. On the *operational* use, 'actuality' refers to the notion expressed by 'actually' in ordinary modal comparisons like "the weather could have been nicer than it actually is." On the *collective* use, 'actuality' refers to the collection of propositions which happen to be actually true. It is the operational use that is involved in condition (b) above.

The case of the tomato illustrates one way condition (b) can fail to obtain. Let p be the proposition that the tomato is non-red but actually red ($\neg R \wedge @R$). This proposition is metaphysically possible. But the proposition that *actually*, the tomato is non-red but actually red ($@(\neg R \wedge @R)$) leads, as we have seen, to contradiction given the assumptions (i)–(iii). Each of these assumptions, however, is plausibly taken to follow from the very nature of actuality (in the operational sense). The nature of actuality, then, rules out p's being actually true, and so p is not possible for actuality.

We here appeal to what might be called the *formal part* of actuality's essence. The notion of actuality, by its very nature, licenses certain formal inferences, including those supporting assumptions (i)–(iii). If a contradiction can be derived from 'actually p' by means of these inferences, then there is a clear sense in which the nature of actuality rules out p's being actually true.

The idea that a notion may, by its very essence or nature, license certain inferences is familiar. For example, Fine (1995: 57–58) holds that the notion of disjunction essentially licenses the inference from p to 'p or q.' Similarly, one might take the notion of conjunction to essentially license the inference from p and q to 'p and q.' However, the case of actuality is somewhat different from these.

17. All are validated by the logics of Crossley and Humberstone (1977), Hodes (1984), Kaplan (1989), and Hazen (1990). The truth of (iii) is admittedly less obvious than that of (i) and (ii). But it follows from the 'K axiom' for actuality $\big((@(p \to q) \wedge @p) \to @q\big)$ together with the thought that actuality is by its very nature a domain in which whatever is true is actually true and vice versa $\big(@(p \leftrightarrow @p)\big)$. See Glazier and Krämer (2024) for further discussion of these assumptions from a technical and philosophical standpoint.

In the cases of disjunction and conjunction, it is plausible to take their essences to be exhausted by the inferences they license (perhaps together with certain other formal properties such as 'being a logical connective'). The formal part of the essence of disjunction or of conjunction, that is, constitutes the whole of its essence. But the same may not hold for actuality.

To see why, consider a third *objectual* use of the term 'actuality,' distinct from the operational and collective uses. On this use of the term, it refers to the totality of existence or being, considered as a single thing. It is natural to draw the following link between the operational and objective uses:

> **Link** It is metaphysically necessary that a proposition is actually true iff it is true in actuality.

What is it for something to be true in actuality? Although there may be more than one way to answer this question, I propose to do so by repurposing an idea of David Lewis's. Lewis (1986: 5–6) held that the operator 'at the possible world w, φ' works (with some exceptions) by restricting the domains of the quantifiers that fall within its scope. Thus for Lewis, to say that at w all ravens are black is roughly to say that all ravens are black, if we ignore everything that does not lie within w.

We may adopt an analogous restrictionist account of the operator 'in actuality, φ.' To say that in actuality all ravens are black, for example, will be (roughly) to say that all ravens are black, if we ignore everything that does not lie within actuality.

But what is actuality? I said above that it is the totality of existence. But if Link is to be at all plausible, then this gloss has to be properly understood. Actuality cannot be taken to be a modally "superfragile" entity, one that could not have been any different than it is. For if actuality were superfragile, then it would seem that what is true in actuality could not be contingent. And so by Link it would also not be a contingent matter what is actually true. But this would contradict our rejection of Necessity of Actuality. What we require, then, is an understanding of actuality on which it is not superfragile but rather capable of modal variation.

A natural thought is that actuality should be understood to be something like the universe. That entity seems capable of modal variation in the way we require: presumably, for example, the universe could have contained one more planet or star than it in fact does. We should not assume, however, that actuality is wholly physical. If there are immaterial Cartesian egos, for example, then these should count as part of actuality just as much as the material bodies to which those egos are yoked.

Let us use 'the cosmos' as a name for actuality so understood. Given Link, it is plausible to think that some aspects of the essence of actuality in the operational

sense will reflect the essence of actuality in the objectual sense—the essence, that is, of the cosmos. What we might call the non-formal or *material part* of actuality's essence will consist in large part of these aspects.[18]

Of course, natural though it is, Link is not indisputable. One might wish to allow that a proposition could have been actually true without being true in actuality. There would then be no reason (at least as far as the present paper is concerned) to countenance a material part of actuality's essence that goes beyond its formal part. But for those who are willing to admit Link, it is an interesting question what this material part might be.

Above I suggested that it will reflect the essence of the cosmos. But what is that? In the remainder of this section, I will discuss some conjectures. These conjectures are speculative, and I would not wish to endorse them, but they will at least serve to illuminate the question of what the material part of actuality's essence is—which will in turn further illuminate the question of what possibilities for actuality there are. We have already seen how these possibilities are constrained by the formal part of actuality's essence. Now we will get an idea of what further material constraints there might be, even if we do not reach any firm conclusions.

First conjecture: spatiotemporality. The cosmos is a spatiotemporal thing. To be sure, it is no *ordinary* spatiotemporal thing. Most such things, such as the Eiffel Tower or the Taj Mahal, are located *in* spacetime, but it might be thought that the cosmos contains all of spacetime and so cannot be located within it. Still, there is a clear sense in which the Eiffel Tower, the Taj Mahal, and the whole cosmos alike all possess a spatiotemporal "footprint." In this sense, the cosmos is a spatiotemporal thing.

One might suppose that whatever is spatiotemporal is essentially so. If that is correct, then the cosmos is essentially spatiotemporal. And so it will be plausible to take it to be necessary for actuality that spacetime exists.[19] Similar conjectures deliver the conclusions that it is necessary for actuality that something concrete exists, that some individual exists, and that something causally efficacious exists.

Second conjecture: origins. Consider Kripke's thesis of the essentiality of origin. A defender of that thesis may hold that the cosmos has its origins essentially. Suppose, for instance, that the cosmos originated in a "Big Bang" singularity. The origin essentialist might take it to be essential to the cosmos that there was such

18. The essence of actuality has also been discussed by Cameron (2008). Much as we have understood actuality (in the objectual sense) to be the cosmos, Cameron understands actuality (or the actual world) to be a concrete world. But while we take actuality to admit of modal variation, Cameron supposes that it has all its properties essentially; this allows it to play a crucial role in his defense of truthmaker maximalism. Thus on Cameron's view, in contrast to our own, Necessity of Actuality is true.

19. I intend this claim to be neutral between a substantivalist and a relationalist view of spacetime.

a Big Bang. It will then be plausible to hold that it is necessary for actuality that there was a Big Bang.

It is crucial here that we are discussing necessity for actuality rather than metaphysical necessity *tout court*. To say that

> it is necessary for actuality that there was a Big Bang

is to say that

> it is metaphysically necessary that, actually, there was a Big Bang.

But that is consistent with the claim that

> it is metaphysically possible that there was no Big Bang.

Why? Because that possibility would have been realized had there been a cosmos, numerically distinct from our own, which did not originate in a Big Bang. What is ruled out is that *this* cosmos, our cosmos, could have existed without having originated in a Big Bang.[20]

The point generalizes. Consider our earlier conjecture that the cosmos is essentially spatiotemporal. That does not support the claim that it is metaphysically impossible for there to be no spacetime. It supports only the claim that it is metaphysically impossible for there to actually be no spacetime.

Third conjecture: laws of nature. Perhaps it is essential to the cosmos to have the laws of nature it does.[21] If so, then it will be plausible to take the laws of nature to be necessary for actuality. The notion of necessity for actuality, then, will play at least some of the theoretical role that has traditionally been assigned to the notion of nomological necessity.

The conjecture that the cosmos essentially has the laws of nature it does is an unfamiliar version of a familiar idea.[22] The familiar idea is that the laws of nature

---

20. Interestingly, on two recent theories of modality there is some pressure to take the initial state of the universe to be necessary (Vetter 2015: 291; Wilson 2020: 28). Some philosophers will be skeptical of these theories on this basis, since they will be of the view that things could have been utterly different throughout all of history. But if the suggestion in the text is right, this view is compatible with taking the initial state to nonetheless enjoy a form of necessity: necessity given actuality. The necessitarian tendencies of Vetter and Wilson, then, may not be so outlandish after all.

21. David Albert (2000) has proposed that among the laws of nature is one, the Past Hypothesis, which lays down the universe's initial conditions. If he is right, then the thesis that the cosmos has its origins essentially is simply a special case of the general thesis that the cosmos has its laws of nature essentially.

22. Though not completely unfamiliar: Bigelow et al. (1992) develop a view on which the laws flow from the essence of a certain cosmic natural kind—a kind of which our cosmos is the sole existing member. See also Glazier (2022: 31).

somehow flow from essence. But this idea is usually coupled with the suggestion that the relevant essences are those of certain scientific properties or natural kinds. The resulting view is called 'scientific' or 'dispositional' essentialism.[23] For example, a scientific essentialist might take it to lie in the essence of electronhood that electrons repel one another.

The main objection to scientific essentialism is that the laws of nature could have been otherwise. It is metaphysically possible, for example, for electrons to attract rather than repel. But this possibility is incompatible with the scientific essentialist's claim that mutual repulsion lies in the very essence of electronhood.

Scientific essentialists have their responses to this objection, though they are not without controversy.[24] But the present version of essentialism sidesteps the problem entirely. If the cosmos essentially has the law that electrons repel one another, this does not support the claim that it is metaphysically impossible for electrons to attract rather than repel. It supports only the claim that it is impossible for electrons in *our* cosmos to attract rather than repel. And although it seems possible for electrons to attract rather than repel, it is not at all clear that it is possible for them to do so in our cosmos. Perhaps any cosmos that permitted electron attraction would simply be a different cosmos, one numerically distinct from ours.

Fourth conjecture: morality. Perhaps the cosmos essentially contains certain *moral* principles or laws. Some philosophers (e.g. Fine 2002 and Rosen 2020) have wanted to take various moral claims to be both metaphysically contingent and at the same time necessary in some other sense. The present conjecture offers a way to make sense of this antecedently somewhat puzzling view. Take as a toy example the "utilitarian law" that any happiness-maximizing act is right. If the cosmos essentially contains the utilitarian law, then it will be plausible to take it to be necessary for actuality that the utilitarian law prevails. But this is compatible with taking it to be metaphysically contingent that the law prevails. For we might allow that it is metaphysically possible for there to be a cosmos, numerically distinct from our own, whose moral laws are wholly non-utilitarian.

5. Conclusion

"Things might have been different, in ever so many ways," Lewis (1986: 1) once wrote. This paper has argued for an extension of Lewis's claim: in ever so many ways, things might have been *actually* different.

23. Ellis (2001) and Bird (2007) are two important defenses of scientific essentialism.
24. See, for instance, Bird (2007: ch. 8).

Different in ever so many ways, but not in any way whatsoever. The possibilities for actuality are constrained by, and the necessities for actuality flow partly from, actuality's nature or essence.

Philosophers have long denied that things might have been actually different. They thereby collapse possibility for actuality and necessity for actuality into simple truth. But once these notions are prized apart, their importance is plain. *Metaphysical* necessity and possibility have received enormous attention, and rightly so. But necessity for actuality and possibility for actuality are of equal or greater relevance to our lives. Actuality, after all, is our home. The ways it must be are ways *we* must be. And the ways it might be form the horizon of all we can hope to do.

Acknowledgements

I owe a great debt to Stephan Krämer, who has shaped my thinking about actuality in many ways. My thanks also to Singa Behrens, Allen Hazen, Paul Hovda, John Mackay, Stefan Roski, Scott Soames, Michael Strevens, Rivka Weinberg, Tobias Wilsch, to the participants of the Hamburg *Forschungskolloquium*, and to audiences at Bratislava, Fordham, Tübingen, the Joint Session, and the Central APA. I would like to dedicate this paper to the memory of Marco Dees, with whom I had some of my first conversations about the necessity of actuality more than a decade ago.

References

Albert, David Z. (2000). *Time and Chance.* Harvard University Press.

Bigelow, John, Brian Ellis, and Caroline Lierse (1992). The World as One of a Kind: Natural Necessity and the Laws of Nature. *British Journal for the Philosophy of Science*, *43*(3), 371–388.

Bird, Alexander (2007). *Nature's Metaphysics: Laws and Properties.* Oxford University Press.

Bricker, Phillip (1989). Quantified Modal Logic and the Plural *de re*. *Midwest Studies in Philosophy*, *14*, 372–394.

Cameron, Ross P. (2008). How to Be a Truthmaker Maximalist. *Noûs*, *42*(3), 410–421.

Chalmers, David J. (2011). Actuality and Knowability. *Analysis*, *71*(3), 411–419.

Cresswell, Max (1990). *Entities and Indices.* Kluwer.

Crossley, John and Lloyd Humberstone (1977). The Logic of "Actually". *Reports on Mathematical Logic*, *8*, 11–29.

Davis, Wayne A. (2015). The Semantics of Actuality Terms: Indexical vs. Descriptive Theories. *Noûs*, *49*(3), 470–503.

Dorr, Cian and Jeremy Goodman (2020). Diamonds are Forever. *Noûs*, *54*(3), 632–665.

Ellis, Brian (2001). *Scientific Essentialism.* Cambridge University Press.

Fine, Kit (1994). Essence and Modality. *Philosophical Perspectives*, *8*, 1–16.

Fine, Kit (1995). Senses of Essence. In Walter Sinnott-Armstrong, Diana Raffman, and Nicholas Asher (Eds.), *Modality, Morality, and Belief: Essays in Honor of Ruth Barcan Marcus* (53–73). Cambridge University Press.

Fine, Kit (2002). The Varieties of Necessity. In Tamar Szabó Gendler and John Hawthorne (Eds.), *Conceivability and Possibility* (253–282). Oxford University Press.

Glazier, Martin (2022). *Essence.* Cambridge University Press.

Glazier, Martin and Stephan Krämer (2024). The Logic of Contingent Actuality. *Ergo*, *11*(8), 198–237.

Hazen, Allen (1990). Actuality and Quantification. *Notre Dame Journal of Formal Logic*, *31*(4), 498–508.

Hermes, Charles (2013). Truthmakers and the Direct Argument. *Philosophical Studies*, *167*, 401–418.

Hodes, Harold T. (1984). Axioms for Actuality. *Journal of Philosophical Logic*, *13*(1), 27–34.

Kaplan, David (1989). Demonstratives. In Joseph Almog, John Perry, and Howard Wettstein (Eds.), *Themes from Kaplan*. Oxford University Press.

Karofsky, Amy (2021). *A Case for Necessitarianism.* Routledge.

Kearns, Stephen (2011). Responsibility for Necessities. *Philosophical Studies*, *155*, 307–324.

Lampert, Fabio and Pedro Merlussi (2021). How (Not) to Construct Worlds with Responsibility. *Synthese*, *199*, 10389–10413.

Lewis, David (1970). Anselm and Actuality. *Noûs*, *4*(2), 175–188.

Lewis, David (1986). *On the Plurality of Worlds.* Blackwell.

Lewis, David (1996). Elusive Knowledge. *Australasian Journal of Philosophy*, *74*(4), 549–567.

Mackay, John (2017). Explaining the Actuality Operator Away. *Philosophical Quarterly*, *67*(269), 709–721.

McKenna, Michael (2008). Saying Good-bye to the Direct Argument the Right Way. *Philosophical Review*, *117*(3), 349–383.

Nguyen, Anthony (2020). Unable to Do the Impossible. *Mind*, *129*(514), 585–602.

Prior, Arthur N. (1957). *Time and Modality.* Oxford University Press.

Rosen, Gideon (2020). What is Normative Necessity? In Mircea Dumitru (Ed.), *Metaphysics, Meaning, and Modality: Themes from Kit Fine* (205–234). Oxford University Press.

Soames, Scott (2007). Actually. *Aristotelian Society Supplementary Volume*, *81*(1), 251–277.

Spencer, Jack (2017). Able to Do the Impossible. *Mind*, *126*(502), 465–497.

Turner, P. Roger and Justin Capes (2018). Rule A. *Pacific Philosophical Quarterly*, *99*(4), 580–595.

van Inwagen, Peter (1980). The Incompatibility of Responsibility and Determinism. In M. Bradie and M. Brand (Eds.), *Bowling Green Studies in Applied Philosophy, Vol. 2* (30–37). Bowling Green State University Press.

van Inwagen, Peter (1983). *An Essay on Free Will.* Oxford University Press.

Vetter, Barbara (2015). *Potentiality: From Dispositions to Modality.* Oxford University Press.

Warfield, Ted A. (1996). Determinism and Moral Responsibility Are Incompatible. *Philosophical Topics*, *24*(2), 215–226.

Wilson, Alastair (2020). *The Nature of Contingency: Quantum Physics as Modal Realism.* Oxford University Press.

Yalcin, Seth (2015). Actually, *actually*. *Analysis*, *75*(2), 185–191.