Metaphysical accounts of modality

A comparative evaluation of Lewisian and neo-Aristotelian modal metaphysics

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~ Introduction

Consider the following alethic modal claims:

(1) *There could be more people in Australia than there currently are*

(2) *Necessarily, all humans are animals*

These claims seem to be intuitively true. But why, and in virtue of what, are they true? According to one well-known view, truth is "the conformity of thought and being";[1] that is to say, there has to be some reality to which a truth corresponds.[2] Closely related to this view of truth is the thesis that truths have *truthmakers*, "some existent, some portion of reality, in virtue of which that truth is true" (Armstrong 2004: 5).[3] If modal claims have no truthmakers, or do not conform to reality in any way, the need for an error-theoretic or semantically revisionary account of alethic modal discourse looms. Such a path comes with its own attendant difficulties, for alethic modal discourse is indispensable to disciplines that are not obviously error-theoretic—for instance, ethics, logic, and the empirical sciences.

A *realist* metaphysical account of modality thusly aims to preserve the *truth* of common sense modal claims such as (1) and (2) in a straightforward way: by identifying some objective part of reality to which modal truths correspond.

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[1] Aquinas (1981: 1 q.16 a.1).

[2] Strictly speaking, truth as conformity to being is similar to, but not identical with, a correspondence theory of truth, given that the former need not involve the claim that there exists a relation of *correspondence* between propositions and the world.

[3] The truthmaker thesis is admittedly controversial, not least because there is little consensus as to how widely truthmaking considerations apply—for example, what are the truthmakers for analytic truths, or negative existential truths? I do not take an explicit stand one way or the other with respect to these questions in this essay; however, the need for substantive and plausible truthmakers for modal truths remains a useful means by which I will adjudicate between rival ontologies in this essay.

In this essay I will evaluate two different realist metaphysical accounts of modality: David Lewis' (1986) *genuine modal realism*[4] (GMR), and *neo-Aristotelian modal realism* (AMR) as put forth by Alexander Pruss (2011).

These accounts differ significantly from one another in one straightforward sense. Lewis' GMR is a *reductive* account of modality; that is, it attempts to reduce the modal entirely to the non-modal, by analysing claims of possibility and necessity in terms of claims about *worlds* and *counterparts*, which are themselves purely non-modal entities. AMR, on the other hand, is *non-reductive* in its ambitions; it analyses claims of possibility and necessity in terms of claims about the *causal powers* of actual objects, which are themselves modal in nature.[5]

Nevertheless, GMR and AMR share similar *ambitions*. Each account seeks to offer a *conceptual analysis* of alethic modal claims of possibility and necessity. In addition, each account offers *truthmakers* for modal truths, and in doing so they aim to ground modality in terms of *more fundamental* bits of their respective ontologies. In this way, neither account is afraid of ontological commitment (although, as we will see, their ontologies stand in sharp contrast to one another.)

It is with respect to these ambitions that I will evaluate various aspects of GMR and AMR in an attempt to get clear on whether either account succeeds in providing a viable metaphysical account of modality.

In §1 I evaluate Lewis' GMR. On GMR, modal claims are analysed in terms of quantifications over *concrete worlds and counterparts*. GMR thus is committed the existence of a *plurality* of concrete worlds other than the actual world. There are two

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[4] I give it this name, following Divers (2002), to contrast it with *ersatz* modal realism, which treats possible worlds as abstract objects of some sort (e.g., sets of sentences or propositions).
[5] See section (2) for an explanation of the sense in which 'causal power' is a modal concept.

objections to GMR that I consider: firstly, that it leads to ethical paradoxes (§1.1); and secondly, that the counterparts it offers as truthmakers for modal claims are fundamentally irrelevant to the de re modal properties of objects (§1.2).

In §2 I look at AMR as put forth by Pruss (2011). In contrast to GMR, AMR analyses modal claims in terms of the *causal powers* of existing objects in the actual world, and takes these powers to be the truthmakers for modal truths. I argue that this view has several prima facie advantages over GMR—one of which is its avoidance of the objections GMR is vulnerable to. I then evaluate two objections to AMR: firstly, that its analysis is not genuinely explanatory (§2.1), and secondly, that it fails to account for the full range of metaphysical possibility (§2.2). I argue that AMR has the resources to avoid these objections, that AMR on balance is more attractive, and that therefore AMR is worthy of serious consideration by advocates of GMR.

1 Evaluating David Lewis' genuine modal realism (GMR)

David Lewis' GMR proposes the following analysis of de dicto claims of possibility and necessity:

A proposition *p* is possible iff in some world, *p* is true

A proposition *p* is necessary iff in all worlds, *p* is true

De re modal claims may be analysed in the following way:

X is possibly *y* iff a counterpart of *X* in some world is *y*

X is necessarily *y* iff the counterparts of *X* in all worlds are *y*

In other words, modal propositions are reducible to propositions about worlds and counterparts. But what are these things? *Worlds*, according to Lewis, are maximal mereological sums of spatiotemporally unified objects—which means that any two objects are in the same world iff they are spatiotemporally related, and conversely, any two objects that are not spatiotemporally related are in different worlds. According to Lewis, there exists a plurality of such worlds; in fact, for *any* class of objects, there exists a world constituted of duplicates of those objects. These worlds are *concrete*—which just means that they are *ontologically on par* with the actual world. Thus, for to

be the case that *possibly, there are unicorns*, is for there to exist a world in which there is a unicorn (hence making it true *that there are unicorns*).

But why is it the case that truths about worlds bear on possibility and necessity? On GMR, a world is *possible* if it is not actual, and on GMR 'actual' is an *indexical* operator that designates *spatiotemporal relatedness* to an individual. On GMR, it is true *that unicorns do not actually exist,*[6] because there exist no unicorns in the actual world, i.e., there are no unicorns spatiotemporally related to us. Likewise, on GMR, it is true *that possibly, I could have studied engineering instead of philosophy* because there exists a person in some world, *my counterpart,* who did study engineering instead of philosophy. He is my counterpart because he bears a particular *similarity relation* to me—in this case he has the same abilities and personal attributes as me, and had a near-identical personal history (except he inexplicably chose the engineering degree over the philosophy one). In this way worlds and otherworldly counterparts are the ontological grounds for all modal claims of possibility and necessity.

In sum, Lewis' account may be described by the following theses:

(A) There exists a plurality of worlds

(B) Worlds are concrete, maximal spatiotemporally unified mereological sums.

(C) 'Actual' is an indexical term, and possibility quantifies over worlds and worldly counterparts.

It seems that GMR provides a coherent analysis for claims of possibility and necessity, and further, provides truthmakers for modal truths, namely *concretely*

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[6] It is even true to say 'unicorns do not exist', given a conversational context of utterance where quantification is implicitly restricted to the actual world.

existing worlds and the counterparts existing therein. There are some other praiseworthy characteristics besides, which I'll briefly consider.

I. A plenitude of possibilities.

What are the limits of metaphysical possibility, on Lewis' account? Lewis adheres to the Humean denial of necessary connections, and thus has an only slightly restricted principle of recombination along the lines of this:

> (D) For any class of objects whatsoever, there is a world that contains duplicates
>
> of them (location, shape and size permitting).

While the validity of such a principle has been contested,[7] I think it works insofar as there is nothing in GMR's ontology that *prevents* such a principle from working. *If* we grant theses (A)-(D), it seems that GMR's concrete worlds ground the truth of physical possibilities, nomological possibilities, combinatorial possibilities, alien possibilities, and the rest. There are some exceptions; for instance, the metaphysical possibility of 'island universes' (i.e., spatiotemporally disconnected spacetimes) is precluded *a priori* on Lewis' account, because of Lewis' definition of possibility as *truth at a world*, coupled with his definition of a *world* as a maximal spatiotemporally unified sum. Likewise, the possibility of 'spirit universes' involving immaterial, non-spatiotemporally located beings are impossible on GMR as well, for the same reason.[8]

All the same, GMR can still accommodate an impressive range of possibilities, something that can't be said for many other theories—especially metaphysical

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[7] E.g., Shalkowski (1994) has argued that Lewis has no real way of ensuring that the plurality of worlds genuinely eliminates 'gaps in logical space' without making GMR circular.

[8] See Pruss (2011:90-91) for a critique of Lewis' preclusion of spirit universes, and Bricker (2001) for a critique of Lewis' preclusion of island universes.

accounts of the ersatz-world variety, which are limited to the *expressive power* of the linguistic entities they posit as truthmakers for modal truths.

II. Not that ontologically crazy.

A common reaction to GMR is 'the incredulous stare'. *GMR flies in the face of common sense.* According to GMR, talking donkeys, dragons, the Greek pantheon, and countless replicas of myself all concretely exist! Lewis does acknowledge that such a denial of common sense is a serious cost for any metaphysic, and in that regard GMR is somewhat at a disadvantage.[9] However, he has two replies to the incredulous stare. Firstly, the cost is outweighed by GMR's benefits; for if the metaphysics of GMR successfully preserves the truth of modal propositions, and further, analyses them in a *reductive* way, then there are substantive reasons to think that the ontology of GMR is worth committing to. Secondly, although there is indeed a sense in which GMR is *quantitatively* extravagant in its ontology, there is another sense in which it is *qualitatively* economical. He writes, "you believe in our actual world already. I ask you to believe in more things *of that kind*, not in things of some new kind" (1973: 87). That is to say, GMR's mosaic of reality is *bigger*, but not *richer*. Of course, it could be replied that other worlds *do* contain qualitatively different stuff, e.g., unicorns, alien natural kinds, the pantheon of gods, etc., and that it would be disingenuous to call these commitments *qualitatively* economical. [10] But I think Lewis' point still holds insofar as these objects are still reducible to sets of properties and relations, with no mysterious irreducible modal properties.

III. Genuine reduction.

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[9] Lewis (1986: 135).
[10] E.g. Kalhat makes this point in his (2008).

If successful, Lewis' GMR possesses the significant virtue of being a *reductive* account of modality. Possible worlds are defined as maximal spatiotemporally related sums of concrete existents, and counterparts are picked out by relations of similarity. There are no modal concepts involved in these terms; thus, Lewis has a purely non-modal analysis of possibility and necessity.

To sum up, I have given some reasons and motivations for considering GMR to be an account of modality that is prima facie successful in its ambition to provide ontological grounds and a complete analysis of modal truths. In the following sections, however, I will examine two objections to GMR, the conclusions of which ultimately provide good reason to think GMR is not worth accepting as true. In §1.1 I argue that the existence of a Lewisian plurality of worlds leads to bizarre and counterintuitive ethical paradoxes; in §1.2 I argue that GMR provides unsatisfactory and counterintuitive truthmakers for de re modal claims.

1.1   GMR requires revision of moral beliefs

In this section I argue that GMR's ontology entails unacceptable revisions of commonsense moral beliefs; for instance, it makes it morally permissible for one to allow a child to drown if given a choice to save it or let it drown, all other things being equal.

If GMR is true, and there are possible worlds *that are ontologically on par with the actual world*, there are two metaphysical consequences relevant for moral considerations. Firstly, the totality of worlds is *unchanging*; this means that individual choices have no *overall* consequences, all things considered. Secondly, every choice that an actual-world individual could possibly make will correspond to counterfactual choices that otherworldly counterparts in fact make. These two consequences of GMR suggest that, at the very least, broadly consequentialist moral considerations will require revision, because after all, no actions in fact entail a change in any overall consequences. Adams (1974: 216) has thus argued that GMR in fact renders any immoral action permissible. He writes:

> If we ask, "what is wrong with actualising evils, since they will occur in some other possible world anyway if they don't occur in this one?" ... I doubt that the indexical theory can provide an answer which will be completely satisfying ethically.

The argument seems to be that some of our moral actions are premised on the belief that *they have genuine consequences*, for instance, we make monetary sacrifices in order to donate to charities that will change the lives of suffering persons for the

better. If it were to be the case that either choice would make no difference to the sum total of suffering in the pluriverse, then there would be no reason to make that donation. It seems that GMR entails what D. C. Williams (Lewis 1986: 123 n.6) suggests is 'complete fatalism', given the inconsequential nature of individual actions.

I. Can egocentric desires ground morality?

Against this conclusion, Lewis argues that "if [GMR] has any bearing on matters of value and morality, it pushes [one] toward common sense, not away" (1986: 128). Lewis makes two claims in support of his view. Firstly, Lewis argues that morality is in large part characterised not only by consequentialist considerations but also by 'egocentric wants', or desires ultimately grounded in desire for the good of one's self; according to Lewis, "an egocentric want is prima facie a different thing from a want as to how the world should be" (1986: 125). According to Lewis, basic moral obligations, e.g., to stay alive, to care for one's friends and family, etc., are grounded in *one's own desires for personal virtue and personal moral goodness,* among other things, and so remain obligatory *regardless* of whether they are obligatory on consequentialist grounds or not. Furthermore, if you choose to act immorally, "you will be an evil-doer, a causal source of evil" (1986: 127). Egocentric desires for one's own good would again preclude such actions. Thus, Lewis argues, basic moral obligations remain unchanged on GMR.

Lewis' second, stronger claim is that there is no basis for having moral concern of any sort for otherworldly counterparts or states of affairs, despite their being 'concrete'. This is because on GMR, the actual world is *causally* as well as spatiotemporally isolated from all other worlds, and as such, no moral obligations of any sort can hold between worlds. Lewis appears to suggest that in the absence of

causal interaction, there is no need for moral concern or duty; to borrow Lewis' example, concern for otherworldly cancer-ridden counterparts of myself and my loved ones is as futile as concern for actual-world cancer patients who lived in the 10ᵗʰ century (1986: 126). Lewis concludes that GMR only poses genuine moral issues for "utilitarians of an especially pure sort", and thus, insofar as such an extreme utilitarian view is not in fact a good account of morality, there is no real moral revision entailed by GMR.

I think that Lewis' first claim seems intuitively true; surely egocentric wants of the sort that Lewis describes play an important role in moral deliberation. However, Lewis' second claim and conclusion can both be challenged. In order for it to be the case that GMR is only a problem for 'especially pure' utilitarians, it must be assumed that *no* moral choices are influenced by consequentialist considerations. As Heller (2003: 3) notes, all it would take to show that GMR entails moral revisionism is *one* good counterexample. To that end I offer the following counterexample.

II. GMR still generates moral dilemmas.[11]

Consider John, a person in the actual world, who comes across a lake in which a child (call the child 'Jeff') is about to drown. Jeff is a complete stranger to John. John is faced with a simple choice (at that very moment, t): he can press a button which will cause Jeff to be saved, or to refrain from pressing the button, which will amount to the certain death of Jeff. (There happens to be a button-operated machine where John stands, that will conveniently save drowning children in the lake with 100% success. I put the scenario this way in order to make both of John's options, to save Jeff or not to save Jeff, unaffected by variables such as personal difficulty, risk, etc.). For the sake of

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[11] This counterexample is inspired by (Heller 2003) and (Pruss 2011).

simplicity, let it be the case that these are the only two possible options John faces at t. John contemplates what his moral duty is. GMR is true, and John knows it, and so he knows that both choices being genuinely possible, there is a world w2 in which Johnnie (John's counterpart[12] in the closest world to the actual world) faces a similar situation in which Jeffrey (Jeff's counterpart) is also floundering. The relationship between John's choice and Johnnie's choice is one of logical necessity. Thus, John knows that if he presses the button, he'll manage to save Jeff, but Johnnie will necessarily fail to save Jeffrey. If he holds off from pressing the button, he knows that Johnnie will certainly save Jeffrey. There is no way that both Jeff and Jeffrey can be saved. Several observations can be made at this point:

(1) Whatever John chooses, he can't change the fact that one out of two (ontologically 'on par') children will drown. The broader point this illustrates is (to reiterate what has already been said) *if GMR is true, no agent's choice alters the aggregate of concrete outcomes.*

(2) John's choice consists not in whether to save Jeff or let him drown; rather, it consists in whether to save Jeff *at the cost of Jeffrey*, or *to allow Johnnie to save Jeffrey at the cost of Jeff*. The broader point this illustrates is, *if GMR is true, agents must take into consideration more persons than they otherwise would (namely, otherworldly counterparts).*

(3) If John considers Jeff and Jeffrey to be of equal worth (recall, they are both strangers), it appears that the two options available to John are, morally speaking, equally permissible. This does not presuppose a utilitarian ethic,—I am assuming that John's egocentric desires for personal wellbeing and the wellbeing of his loved ones,

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[12] I assume that this world has only one relevant counterpart of John (i.e. Johnnie).

etc., are in play. But it seems that either choice is still permissible for John—and in both situations, John will be relieved that a stranger *has* been saved, and he will be deeply saddened by the death of the other. It seems implausible to say that John is *obligated* to save Jeff at the cost of Jeffrey, or vice versa—that would be tantamount to saying that there is a moral *obligation* that some particular innocent person to be killed. The broader point illustrated is, *if GMR is true, there are situations in which what counts as morally* permissible *for agents changes—even granted the same broad egocentric obligations.*

If the three points illustrated by John's scenario are genuine consequences of GMR, I take it that they highlight deeply counterintuitive moral consequences that Lewis' response does not genuinely address. The first point serves to illustrate a broadly consequentialist worry that is, I think, not felt only by 'pure utilitarians' but by most persons, because even if consequentialist concerns are not *the only* moral concerns, they are nevertheless an essential part of moral reasoning.

Lewis might respond that w2 (and all other worlds) are *causally isolated* from the actual world of John, and thus what Johnnie and Jeffrey get up to should not enter John's moral considerations. Thus, contra (2), John's choice consists only in whether to save Jeff and be a causal source of Jeff's being saved, or to let Jeff drown and thereby be "a causal source of evil" (1986: 127), i.e., by his *omitting* to save Jeff; John is thereby, contra (3), *obliged* to save Jeff.

This response is premised on the view that causal relations are the only relevant relations in our moral deliberations, (causal relations being those intra-worldly relations present between John's actions and Jeff's living/drowning, which are *not*

present between John's actions and either of Johnnie's actions or Jeffrey's living/drowning). However, as Heller (2003: 13-17) and Pruss (2011: 100-105) have both pointed out, there is still a *counterfactual* that holds in John's case with logical necessity, and it is implausible that causal relations should negate the force of this counterfactual (which is what needs to be done in order for Lewis' reply to negate this counterexample). The counterfactual is as follows. For any action B, the following counterfactual is true for John:

(J) Were John to B, the counterpart of John in the closest world to the actual world would ~B.

Pruss (2011: 101) argues that a standard Lewisian interpretation of (J) comes out true, because to evaluate (J), we look at the closest world where the antecedent holds, namely, w_2 (where John's counterpart, Johnnie, B's). At this world, the consequent would be true, because the counterpart of *John according to w_2* (i.e. Johnnie)[13] in the closest world to his world would be John in w_1, and at w_1 it is true that John ~B's. According to Pruss, if we accept that counterfactuals of this sort are true, then there is no relevant difference between the relation between John's making it the case that Jeff drowns, on the one hand, and John's making it the case that Jeffrey drowns, on the other hand. The reason, according to Pruss, is that causation *is ultimately reducible to counterfactual dependence* on Lewis' account anyway.[14]

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[13] Note that I treat 'John' as a non-rigid (or as Pruss calls it, a 'quasi-rigid') designator. 'John' picks out John in the actual world, and in all other worlds it picks out *John's counterparts in those respective worlds*. This is important, because if 'John' and 'the counterpart of John in the closest world…' were rigid designators, then propositions about them would be *necessary* propositions, and then there would be no counterfactuals that could apply to them.

[14] Cf. Pruss 2011: 101, n. 29.

It might be replied that there is a relevant distinction to be made between the two kinds of counterfactual dependence at play, i.e., that causation is *more* than simply counterfactual dependence of the sort that both the intra-world and trans-world counterfactuals exemplify. Perhaps there needs to be a *direct* causal chain between John and the victim. However, this claim is also implausible and unintuitive for its own reasons. For example, if in a different scenario John *and Jim* arrive at another pool simultaneously to see a drowning child, Jack, and, upon noticing Jack, both John and Jim make to save him, it would seem intuitively the case that John is permitted to let Jim save Jack—because what counts is *that Jack is saved*, not that John bears a causal relation to Jack's being saved. If direct causal chains were necessary, then it would seem that it is praiseworthy for John to attempt to put up a strong fight with Jim in order to make sure *he himself* is the one who is causally responsible for saving Jack. If anything, this seems egocentric in a selfish way.

Perhaps Lewis could respond here that in this situation, John's act of omission in letting Jim save Jack still amounts to a causal relation of some sort, because the intra-world counterfactual, *if John were not to directly act to save Jack, Jim would save Jack*, is true. But intuitively this does not count as a real causal relation any more than the trans-world counterfactual present between John and Jeffrey, and if it were to be stipulated as being such, it would seem ad hoc. Thus, to avoid imposing counterintuitive moral obligations on John to personally save Jack, it seems that causal relations should not be considered paramount in determining moral obligation.

However, if this is conceded, then *inevitability* relations (and not causal relations) are the relevant relations in cases such as John's considering whether to save

Jack, or whether to save Jeff, or whether to save Jeffrey. If this is granted, then once again, there is no reason to privilege Jeff's being saved over Jeffrey's being saved. A dilemma could thus be posed for any potential moral account on GMR. *Either*

(1) Egocentric wants are such that individuals have the duty to *cause* good outcomes in a sense that is stronger than mere counterfactual dependence; *or*

(2) Egocentric wants do not include the duty to cause good outcomes in a sense that is stronger than mere counterfactual dependence.

If (1), then morality must be revised to preclude John from being permitted to allow Jim to save Jack. If (2), then morality must be revised to include consideration of the outcomes of otherworldly individuals, because counterfactual dependence relations hold by logical necessity between one's actions in the actual world and outcomes that pan out in the closest world to the actual world. I.e., John is permitted to allow Johnnie to save Jeffrey, and thus let Jeff drown.

It should be noted that if counterfactual (J) and (2) are accepted, the consequences go far beyond cases of allowing drowning children to drown. Pruss (2011: 105-106) notes that an individual's choice to engage in self-torture entails the sparing of a counterpart's self-torture, and given the right motivations this is surely a noble thing (even granted one's egocentric desires and duties), for personally enduring suffering in order to spare the suffering of another is self-sacrifice. But now spontaneous acts of self-harm are potentially morally supererogatory, which is absurd. The list of counterintuitive consequences goes on.

It might be objected on other grounds, that there are reasons to privilege actual individuals over otherworldly individuals; for example, the very fact of spatiotemporal

relations between actual individuals and spatiotemporal isolation from possible individuals could constitute reason for John to privilege Jeff over Jeffrey. John can *see* Jeff, is physically aware of Jeff's presence, and in virtue of this relation has a stronger obligation to save him, just as one might have an obligation to save a drowning friend over a complete stranger.

The success of this objection hangs on spatiotemporal relatedness as being a sufficient 'bond of similarity'. However, this does not seem to be a 'plausibly strong' enough bond in the way that family relations or bonds of friendship are. For example, if a person is considering whether to donate their blood to a stranger, or to give money necessary to aid an unknown foreign country, it seems arbitrary to consider the mere fact of *being part of the same maximal spatiotemporally unified sum* genuine grounds for privileging one set of persons over another, and so until further grounds are given for the value of spatiotemporal relatedness, the objection fails.

III. Duplicate worlds to the rescue?

A possible way of avoiding ethical paradox is mentioned by Sinhababu (2008), who suggests that if *duplicate worlds* exist, ethical worries are negated. The reason is that it is only on the assumption that there is 'one world per possibility' that the plurality of worlds is unchanging (after all, all possibilities are instantiated in some world, full stop). However, if for any given world, duplicates of that world also existed, then the actual world might be imagined to not 'fill out' the space of logical possibility, but rather *add* to the already filled plurality of worlds. On this picture, then, the actual world being one way or another *does* change the aggregate of outcomes; thus, it seems true now that if John chooses to save Jeff, there will be one *more* world in which a

child is saved, and if John chooses to let Jeff drown there will be one less. Further, the counterfactual (J) no longer holds, for if I were to B, the counterpart in the closest world to me would *also* B; after all, the closest world would be inevitably a duplicate world. It seems that John now has good reason to choose to save Jeff; hence, ethical dilemma avoided.

However, are some serious prima facie ontological problems with duplicate worlds. Perhaps the most obvious one (cf. Pruss 2011: 75-80) is that it leads to an implausible arbitrariness. How many duplicates are there for each world? Two? Nine? Five thousand? There does not seem to be a principled answer as to how many duplicates there are. A Lewisian might respond that a determinate answer need not be called for—one just needs to hold that there are *some* duplicates, never mind that their exact distribution will be somewhat arbitrary; after all, this is still an acceptable bullet to bite in comparison to accepting ethical paradox. However, even in the absence of commitment to a determinate answer, the arbitrariness still seems serious to me for two reasons. Firstly, on GMR, the plurality of worlds *necessarily exists*; that is to say, whatever the number and distribution of duplicates there in fact are for each world, it is not the case *that the plurality of worlds could have been some other way*. To admit that the plurality of worlds itself possesses modal properties would be to enter a vicious regress (for there would have to be *a world* in which a different plurality of worlds existed, etc., etc.). Secondly, the distribution of duplicates could not be a 'neat' one, such as 'exactly one duplicate per world' or 'exactly X duplicates per world', because such an answer would render the plurality of worlds unchanging, leading back to the ethical paradox—unless one held that all worlds had the exact same

number of duplicates *except* if John chose B instead of ~B, in which case there would be one more B-world than a ~B-world; which seems even more arbitrary than before.

One possible 'neat' answer might be that there are *infinitely* many duplicates for each world; such an answer avoids an arbitrary *distribution* of duplicates, while avoiding ethical paradox. However, leaving aside problems raised by infinity, this ontology is infinitely large, and for that reason does not seem acceptable. It thus seems that the GMR theorist should reject duplicate worlds, because they are too arbitrary and ad hoc to be plausible.

IV. Conclusion

In my opinion, the arguments in this section show that GMR, by committing to the existence of a plurality of worlds and otherworldly individuals, all equally concrete, has bizarre and counterintuitive consequences (either for ontology, in the case of duplicate worlds, or else in the normal scenario, for our moral beliefs). If GMR (with no duplicates) is true, conscientious persons face moral dilemmas when faced with choices such as whether to save drowning children or let them die, or whether to torture themselves spontaneously or carry on living normally. Furthermore, on GMR the obviously immoral choices in those two scenarios become morally *permissible*, although not obligatory.

It might be argued, perhaps, that moral intuitions and beliefs are far from *indefeasible* or analytic, and in fact should not play a *determining* role in evaluating the truth of a metaphysical theory. I think I agree, insofar as some moral intuitions are themselves inconsistent, and 'moral conservatism' taken on its own would be a strange methodology for doing metaphysics. Nevertheless, insofar as both metaphysical and

moral intuitions build on common sense intuitions, and modality is itself a realm where common sense intuition plays an important role, I think moral views deserve to have a role in determining how likely a metaphysic is to be true, especially when there is no decisive evidence either way. Insofar as we have good reason to consider the moral views entailed by GMR to be false, we have good reason to reject GMR.

1.2   GMR gives unsatisfactory truthmakers for de re modality

The second objection to GMR I shall consider is that GMR fails to provide satisfactory ontological grounds for modal claims. Recall that on GMR, de re modal propositions are equivalent to (non-modal) propositions about *counterparts* in other worlds. Two individuals are *counterparts* iff they bear a particular *similarity relation* to one another (which similarity relations are weighted in different degrees and respects, to be picked out in general according to conversational context). In this way, a single individual can be *represented* in multiple worlds by its counterparts, and thus be said to 'exist in different worlds', or better, exist *according to many different worlds*. On GMR, the following *de re* modal proposition

   (H) Hubert Humphrey could have won the election

Is true, because the following proposition is true:

   (H*) There is a world according to which Hubert Humphrey won the election.

I.e., there is a world in which a counterpart of Hubert Humphrey won the election. In this way, counterparts are integral to Lewis' *reduction* of modality (i.e. Reducing modal claims to non-modal claims about counterparts) as well as to the *grounding* of de re modal claims (such as the claim that Humphrey could have won the election).

   However, a consequence of GMR's counterpart-theoretic analysis is that the proposition *that Humphrey could have won the election* is made true by someone completely isolated from Humphrey (albeit similar to him in important respects).

Kripke, one of the most well-known articulators of this objection, writes (1972: 45, n. 13):

> The counterpart of something in another possible world is *never* identical with the thing itself. Thus, if we say, "Humphrey might have won the election (if only he had done such and such)", we are not talking about something that might have happened to *Humphrey* but to someone else, a 'counterpart'. Probably, however, Humphrey could not care less whether someone *else*, no matter how much resembling him, would have been victorious in another possible world.

Divers (2002: 122-239) identifies two criticisms implicit in Kripke's passage as to why the GMR account's analysis of Humphrey's possibly having won the election is fundamentally unsatisfactory. Firstly, Humphrey's *egoconcern*[15] with *de re* modal and counterfactual truths about himself is at odds with facts about counterparts. In other words, GMR requires counterintuitive revisions to psychological attitudes involving de re modal claims. Secondly, and more fundamentally, Counterparts *as truthmakers* are intuitively irrelevant to *de re* modal truths about an individual. Thus, *GMR brings irrelevant things into the story of de re modal truths.* It is specifically this second criticism that I focus on in this section.

I. *Humphrey's counterpart is irrelevant.*

As it stands, there is prima facie weight to the claim that counterparts are irrelevant truthmakers for de re modal properties, because it is certainly counterintuitive that claims about what Humphrey or you or I could have done, are in fact claims about what *other people* in other worlds *happened to do*. Those otherworldly people simply shouldn't, and don't, have any effect on Humphrey's de re modal properties. However,

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[15] *Egoconcern*s are, in this context, egocentric attitudes and concerns 'irreducible' to concerns or attitudes towards others.

several arguments have been made by Lewis and others to the effect that this criticism holds no weight for GMR at all.

II. The tu quoque strategy?

Lewis' own strategy in his (1986) is to direct *tu quoque* responses at two rival theories, after which he concludes that GMR is not disadvantaged by Kripke's objection. The objects of Lewis' critiques are *transworld identity theory* and *reductive ersatzism*, theories which both intuitively *appear* to avoid Kripke's objection and thus bear an advantage over GMR in light of it. The strategy is, broadly speaking, a *tu quoque*, because Lewis assumes that if he can show that there are no rival accounts that have *more* success than GMR with respect to the objection, then there is overall no reason to consider GMR disadvantaged by Kripke's objection.

Without at this point addressing the content of Lewis' arguments (for I think Lewis succeeds insofar as he gives reason to prefer GMR over transworld identity theory and reductive ersatzism), I think the *tu quoque* is an inherently limited response to Kripke's (1); for even if Lewis succeeded in showing that *all* rival reductive accounts shared equal or worse difficulties than GMR, Kripke's (1) would not thereby be rendered any less insignificant. Given that my evaluation of GMR in this essay is a comparative one, and competitor, neo-Aristotelian modal realism (AMR), is itself a *non-reductive* account of modality,—Lewis' tu quoque threatens to elicit the response, "so much the worse for reductive theories of modality".

III. Appealing to the 'paradox of analysis'?

A more direct response to Kripke's objection is that it rests on an 'appeal to intuition' that is ultimately not worth taking seriously. Ted Sider has argued that while

preserving intuitions is an important task in *some* metaphysical projects, reductive analyses (in particular) *inevitably* sacrifice intuitions to some degree, because of the fact that reductive analyses are by their very nature 'not obvious'. *Of course* GMR provides an analysis of modality that violates some intuitions, but the *reason* it violates our intuitions is simply because of the 'paradox of analysis' (Sider 2003, 2006: 1-2). Sider implies that there is nothing particular to GMR's analysis that warrants serious cause for concern. Thus, according to Sider, Kripke's objection fails because even if its conclusion were correct, it would be *too* strong—it would imply that all non-obvious reductive analyses are unacceptable, which is absurd. Therefore, the fact that counterparts are intuitively irrelevant is not a good reason for rejecting GMR.

This argument (as it stands) is successful *only if* what is counterintuitive about GMR's counterpart analysis can be attributed *solely* to the 'paradox of analysis', and that GMR's analysis *otherwise* counts as a sound analysis. On this count the argument is vulnerable to several criticisms.

Firstly, as Jacobs (2010:5) has pointed out, the intuitive plausibility of a reductive analysis is determined *not* by 'obviousness' but rather by whether the *analysans* is suitable for the *analysandum*, i.e., whether the reductive base provided by GMR is *linked in an appropriate way* to the de re modal properties to be analysed. On GMR, the analysandum is the proposition that *possibly X has y*, while the analysans consists in three basic claims: (i) *X stands in a similarity relation to an individual X2 (ii) X2 is in another world w2, and (iii) X2 has y*. It seems that (iii) on its own confers no relevance (*some* individual winning the election is irrelevant to the truth of Humphrey's possibly winning the election); likewise for (ii): spatiotemporal location

(or in this case, isolation) does not appear have any modal relevance to Humphrey's possibly winning the election. So, the important link seems to be (i), the counterpart relation. However, it seems that the counterpart relation, being simply a similarity relation, does not appear to have any bearing on modality either. For instance, no doppelganger of Humphrey *in the actual world*, no matter how similar to Humphrey in appearance or character, would have any bearing on *what Humphrey himself could have done*. But the difference between this-worldly doppelgangers and otherworldly doppelgangers is a mere matter of spatiotemporal disconnectedness. It seems intuitively the case that an entity standing in a relation of similarity plus spatiotemporal disconnectedness to Humphrey, is *intrinsically incapable* of conferring any modal property whatsoever on Humphrey in virtue of that relation alone. It seems that Humphrey could have won the election even in the absence of Lewis-worlds; that is to say, Lewis worlds and the election-winning counterparts of Humphrey in those worlds intuitively remain irrelevant to the de re modal fact that Humphrey could have won the election. Kripke's objection holds.

At this point a Lewisian might object that there *is* an important sense in which similarity relations are intuitively relevant to *de re* modality. For instance, if I learn that an individual similar in many relevant respects to myself (similar build, physical strength, etc.) did in fact climb a mountain, then I will likely have learned that it is possible that I myself can climb that mountain too. And this is what GMR offers—counterparts standing in relations of similarity who make true de re modal facts about individuals in the actual world.[16]

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[16] This argument is taken from Divers (2002), although he uses it to make a different point.

However, I think this response fails to distinguish between *truthmakers* and *evidence*. Recall that truthmakers are "some existent, some portion of reality, in virtue of which that truth is true" (Armstrong 2004: 5). *Evidence*, on the other hand, is *epistemic* information that aids in determining the truth of a proposition. It is true that individuals who bear similarity relations to Humphrey may provide *evidence* for a great deal of modal information about Humphrey and what he could do. However, individuals who are *not* counterparts of Humphrey can play this role as well; presumably there are individuals similar in the relevant respects to Humphrey who *aren't* Humphrey's counterparts—maybe they are in the same world as Humphrey, or there are individuals in their respective worlds who are *more* similar to Humphrey and thus trump them as counterparts[17]. In sum: even if individuals bearing similarity relations to Humphrey give *evidence* for de re modal truths, they are not thereby good *truthmakers* for de re modal truths.

But what *would* intuitively count as a good truthmaker for de re modal truths, such as Humphrey possibly having won the election? Intuitively, the truthmaker should not involve anything other than Humphrey himself and individuals causally related to him, as well as perhaps the states-of-affairs relating to the election. This is not a precise answer, but I don't think a precise positive answer needs to be given at this point for it to be concluded that an otherworldly counterpart is intuitively *not relevant to Humphrey* in the way a truthmaker should be.

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[17] I actually think my earlier example illustrates it best: I conclude that I can climb the mountain after observing similarly built fellows successfully make the climb, but I never actually observe *my counterpart*, who is causally and spatiotemporally isolated from me. Ironically, counterparts in point of fact *aren't even a direct source of evidence*.

On my evaluation, then, the objection from irrelevance constitutes good reason for rejecting GMR. Lewis' arguments ultimately do not challenge the fact that that individuals standing in counterpart relations are intuitively simply the wrong kind of analysans for de re modal claims. Lewis' *tu quoque* response does nothing more than to indict other would-be reductive accounts of the same fate as GMR, while Sider's defense of GMR simply fails to acknowledge the nature and seriousness of the irrelevance of counterparts to GMR's project of providing ontological grounds.

1.3   Summary and preliminary conclusions

In this chapter I considered some arguments that challenge GMR's claim to provide a good account of modality; that is to say, to provide a correct conceptual analysis, plus ontological grounds, for modal claims. While I noted at the outset that GMR possesses some prima facie virtues,—notably (a) its accommodation of a plenitude of possibilities, and (b) a kind of ontological economy that dovetails with its *reduction* of modal facts to purely non-modal facts,—I then argued in §1.1 that if GMR is the correct metaphysical account of reality, ordinary clear-cut moral situations become bizarre ethical dilemmas, and certain actions—such as allowing innocent children to drown, or committing self-harm—become morally permissible. While this is not a full-fledged disproof of GMR, any kind of paradox should be cause for concern in evaluating the correctness of a metaphysical account, especially because one implication of GMR's ethical revisionism is that the moral beliefs of *those who reject GMR* are in fact profoundly misguided.

I then argued in §1.2 that the *counterparts* proposed by GMR to be the truthmakers for modal claims are irrelevant to the de re modal properties of actual objects, such has Humphrey's *possibly having won the election*. I evaluated some possible responses on behalf of the GMR theorist,—notably Sider's appeal to the 'paradox of analysis'—but concluded that they did not significantly mitigate the problem of irrelevance.

2   Evaluating neo-Aristotelian modal realism (AMR)

I now turn to an alternative account of modality, which I call neo-Aristotelian modal realism (AMR). AMR has also been identified as 'hardcore actualism' (Contessa 2010), a 'powers theory of modality' (Jacobs 2010[18]), and 'dispositional modal actualism' (Borghini and Williams 2008), in the literature. On this account, modal claims are analysed in terms of claims about the *causal capabilities* or *powers* of actually existing objects, and accordingly, the causal powers of existing objects are the truthmakers for modal truths.

What is a power? I take 'power' to be one in a family of roughly similar concepts, among which include 'disposition', 'capacity', 'ability', 'propensity', 'tendency', etc. While these concepts do differ in use and application, I think that my characterisation of powers will describe *shared* features of these concepts that are pertinent to AMR. Powers are firstly *objective* and *actual* abilities possessed by objects *for* the bringing about of particular 'manifestations', or states of affairs. These manifestations (typically) take place in the presence of a 'stimulus', a state of affairs that itself (typically) involves the power working in concert with other powers.[19] For example, *solubility* is an actual, objective power possessed by salt to *dissolve* in the presence of *water.* This description of solubility is not exhaustive (e.g., when water is

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[18] Although Jacobs proposes an analysis of modality in terms of *counterfactuals*, and so differs substantially from the account I provide.

[19] Exceptions can be found to this typical characterisation; e.g., some powers are spontaneous. Molnar (2003: 87) cites as an example of a spontaneous power *rest mass* (according to General Relativity); massive objects continually and spontaneously manifest their power in interaction with spacetime.

saturated, salt no longer dissolves in it), but it allows us to identify the *stimulus*, i.e., the state of affairs of salt's being placed in contact with water, as well as the *manifestation*, i.e., dissolving.

This example allows us to identify two further key characteristics of powers. Firstly, powers are *independent* from their manifestations; salt would still have the power to dissolve in water even if it were never to have been the case that salt had come into contact with water (and hence never *actually* dissolved in water). Secondly, powers are *intrinsic* to objects; that is to say, an object possesses powers in virtue of properties intrinsic to itself. Thirdly, the properties of an object that ground its powers are themselves *powerful* in nature; that is to say, they are not wholly reducible to other, non-powerful properties[20].

These characteristics of powers are significant to AMR's account of modality for several reasons. Firstly, it is because powerful properties are the truthmakers for powers themselves, that facts, e.g., *that this salt crystal S dissolved in water at t,* are true in virtue of the causal powers of salt and water (and not, for instance, facts about possible worlds, or laws of nature, etc.). That is to say, powers are *causally explanatory* of events.

Secondly, it is because powers are *independent* from their manifestations that powers have 'modal' force, insofar as a salt crystal S's power to dissolve in water is thus what makes it true *that S could dissolve in water,* regardless of whether or not it is the case that S turns out to dissolve in water. In this way, on AMR, claims of possibility and necessity are explained *in terms of* powers.

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[20] In this way, the 'non-reductive realism' of AMR may be contrasted with 'reductivist' views of powers, on which powers and dispositions are reducible to purely non-powerful ('categorical') properties; e.g., Lewis (1997, 1986) and Armstrong (1997).

Finally, it is because of the *actual* and *objective* nature of existing powers that AMR can claim to provide genuinely non-trivial grounds for possibility and necessity. As Alexander Pruss says, "we can be *actualists* in good standing and yet believe in [powers]" (2011: 212).

We are now in a position to turn to AMR's analysis of modality. De dicto possibility and necessity may be analysed in the following way:

A proposition *p* is possible iff

(i) *p* is true; *or*

(ii) there exists (or did exist, or will exist)[21] an *A* (or *A's*) with the power for *bringing it about*[22] that *p* is true; *or*

(iii) there exists (or did exist, or will exist) an A_1 (or $A's_1$) with the power for bringing about an A_2 (or $A's_2$) with the power for bringing it about that *p*, *or* there exists an A_1 that has the power for ... an A_{1+n} (or $A's_{1+n}$) with the power for bringing it about that *p*;

A proposition *p* is necessary iff it is not the case that ~*p* is possible

De re modal propositions may be similarly analysed:

X is possibly y iff there exists (or did exist, or will exist) an *A* (or *As*) with the power for bringing it about that *X* is y

X is necessarily y iff there exists (and did exist, and will exist) no *A* (or *As*) with the power for bringing it about that *X* is not y.

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[21] Because the range of actual powers is not limited to *presently* existing powers, but extends to all powers and powerful properties that exist, have existed, or ever will exist, it follows that the range of the domain of powers is effectively the same for presentists as it is for eternalists.

[22] In this analysis, the causal power of an *A*, or *A's*, 'brings it about' that *p* is true iff the manifestation of that power would *explain p*.

So goes Pruss' account of modal claims. To put the above analysis to work, take the following claim about the salt in the salt sachet on my table in front of me, and the hot cup of coffee, also in front of me:

> *(p) Possibly, the quantity of salt crystals S in this salt sachet could dissolve in my*
> *cup of coffee*

Following clause (ii) from the first biconditional, we can say that *p* is true *because* of the powerful properties instantiated by S, in virtue of which S has the *power* to dissolve in my coffee mug; S's causal power to dissolve in water is thus the truthmaker for *p*. Let's take another example:

> *(p*) Possibly, Kant could have had grandchildren*

Assuming that Kant did not have any children, it seems that there exists (and existed, and will not exist) nothing with the power to bring it about that *p**. After all, Kant himself did not have the power to *directly* bring about grandchildren. However, following clause (iii) from the first biconditional we can still say that *p** is true, because Kant had the power (in virtue of possessing functional reproductive organs) to have children, and *these children* would have had (given time and appropriate conditions) the power to beget children of their own, thus bringing about *p**. In this way, despite it being the case that *no actual powers exist* to directly bring about *p**, it is still the case that *p** is grounded in a chain of causes that is *initiated* by actually existing causal powers (in this case, Kant's reproductive powers). A useful distinction may be made here between *first-order* powers and/or powerful properties, and *higher-*

order powers and/or powerful properties.[23] First-order powerful properties refer to the totality of *actual* (past, present or future) powerful properties, and the powers they support are first-order powers. On the other hand, *second*-order powerful properties refer to those powerful properties instantiated by the *manifestations* of first-order powers. These second-order properties themselves support more second-order powers, and so on, with further iterations yielding higher-order properties and powers. With this in mind, we can explain p^* in another way: although there exist no first-order causal powers, it is nevertheless the case that there are first-order powerful properties that support second-order properties and second-order powers to bring it about that p^*.

On AMR, some modal claim q is necessarily true iff $\sim q$ is not possible either in the manner of (i), (ii) or (iii) discussed above. Let us assume that the following claim is true:

> *(q) Necessarily, Socrates could not have failed to be a human*

We can then say that it is *impossible* for Socrates to have failed to be a human, because there is nothing with the ability to initiate a causal chain (direct or indirect) to bring it about *that Socrates failed to be a human.*

In summary, AMR may be said to consist in the following commitments:

(1) Causal powers (actually) exist

(2) For every possibility there corresponds some *A* capable of initiating a causal chain (direct or indirect) to bring about that possibility

In this way, AMR's ontology contrasts with GMR in being hospitable to *actualism*, because it requires no commitment to *possibilia* of any sort. Possible cars, pizzas and

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[23] This paragraph is inspired by Borghini & Williams (2008) who make the same distinction.

persons do not need to *exist* in worlds; their possibility is simply understood in terms of the causal powers had by actual objects for bringing them about. It also contrasts with GMR in being *non-reductive* in nature. In light of these characteristics, we are now in a position to consider some prima facie advantages had by AMR over GMR.

I. AMR avoids ethical paradoxes.

The ethically non-revisionary nature of AMR is a direct consequence of its actualist ontology. On AMR, there is no unchanging plurality of worlds, and hence no unchanging aggregate of outcomes; on AMR, if I choose to save a drowning child, one more child is saved than there would have been if I had not chosen to save him. The ethical paradoxes on GMR were a direct consequence of positing *concretely existing possibilia* to account for the space of possibilities; by avoiding such a move, AMR avoids ethical revisionism.

II. Causal powers are intuitively good truthmakers for de re modality.

Consider the case of Humphrey once again, and the following sentences:

> (i) Humphrey could have won the election

> (ii) Possibly, Humphrey won the election

> (iii) There exists (or existed, or will exist) some *A* with the causal powers to bring about Humphrey's having won the election.

> (iv) Humphrey had the causal powers to win the election.

> (v) There exists a counterpart of Humphrey who won the election.

The first two of the above sentences are very similar, except that (i) is couched in more 'ordinary' language than (ii). AMR's analysis of (i) is (iii), and (iv) is an equivalent 'paraphrase' of (iii). On the other hand, GMR's analysis of (i) is (v).

Firstly, notice that AMR's truthmakers, being *causal* powers, are necessarily *causally connected* to Humphrey. Of course, one might imagine many other causal powers, e.g., the power of other politicians to rig the election, that do not appear connected to Humphrey but would have also make it possible for Humphrey to win the election—but these other causal powers would still be causally connected to the *event* of Humphrey's winning the election. Secondly, notice that the *powerful properties* possessed by Humphrey which ground his causal powers for winning the election,—e.g., his intelligence, his oratory skills, etc.—are *intrinsic* properties of Humphrey.

These observations highlight the way AMR's account contrasts with that of GMR; for on GMR, the truthmaker for (i) is Humphrey's otherworldly counterpart, who is *extrinsic* to and *causally isolated* from Humphrey. These characteristics of GMR's account motivated in part the argument of (§1.2), where I argued that GMR gives *irrelevant* truthmakers for Humphrey's de re modal properties. In contrast, AMR does not require one to look beyond Humphrey's *intrinsic powerful properties* in order to find a truthmaker for (i)-(ii), properties which themselves support powers causally related to Humphrey and his surroundings. Thus, it seems that AMR's truthmakers avoid the charge of irrelevance.

III. AMR is close to ordinary language semantics.

The examples (i) and (iv) from the previous section bear intuitive similarities to one another, in contrast to the dissimilarity between (i) and GMR's (v). The comparison reflects that AMR preserves ordinary language intuitions about what *can*

and *could* be done to a greater degree than GMR's counterpart-theoretic analysis. In this way, AMR has another prima facie advantage over GMR.

So far, then, it seems the case that AMR has several prima facie advantages over GMR. In the following sections I evaluate some criticisms of AMR that, I hope, will shed further light on the extent of AMR's theoretic power as well as its comparative pros and cons with respect to GMR.

2.1 Does AMR provide unsatisfactory explanations?

In this section I consider some objections that challenge AMR's claim to provide a satisfactory analysis of modal claims. The first is that AMR's truthmakers are objectionably 'trivial', and the second is that AMR gives the *wrong direction of explanation* by explaining possibility and impossibility in terms of causal powers, when in many cases this seems to yield counterintuitive results.

I. Are powers suspicious truthmakers?

It might be argued that despite the AMR theorist's claim that powers are actual, objective and so forth, they still 'point beyond themselves' in a way that ultimately makes them unsatisfactory, 'trivial' truthmakers. Ted Sider, in his (2001), does just this by comparing powers and dispositions to presentist *primitive tensed properties.* The appeal to primitive tensed properties possessed by presently existing objects is one way some presentists have attempted to accommodate truthmakers for past truths, within the confines of presentist ontology.[24] However, according to Sider, such truthmakers are 'dubious ontological cheats', because these properties are 'irreducibly hypothetical' and 'no less grounded' in reality than the truths they purport to ground (2001: 40-42). Sider implies that AMR is likewise open to criticism by grounding modal truths in powers, because powers are 'irreducibly hypothetical' and thus just as unsatisfactory as the presentist's primitive tensed properties.

Before contuining, I think one major disanalogy between causal powers and 'primitive tensed properties' is worth noting. One reason why the presentist's past-

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[24] E.g., Bigelow (1996).

tensed properties do not appear to do any real reductive or explanatory work is that there is a one-to-one correspondence between true propositions about the past and past-tensed properties of the world.[25] In contrast, AMR does *not* posit an actual (past, present or future) causal power for every fact of possibility; rather, the manifestations of actual (i.e. first-order) causal powers yield only a *subset* of all the metaphysical possibilities. The full range of metaphysical possibility is encompassed by the iterated manifestations of both first-order and higher-order causal powers, with higher-order causal powers themselves being merely *possible* powers, grounded in first-order powerful properties. By explaining metaphysical possibility in terms of actual powers in this way, AMR clearly provides a non-trivial *reduction* of modal truths.

Of course, this answer does little to alleviate Sider's main worry, which was that powers 'point beyond themselves' in an unacceptable way. I think such an objection is ultimately unhelpful, however, because *all* non-reductive accounts of modality 'point beyond themselves' to some degree. Rejecting non-reductive accounts of modality *tout court* does nothing to vindicate GMR, which, as we saw in §1, still has to face the counterintuitive consequences that accompany its reductive ambitions. If anything, Sider's criticism threatens *eliminativism* with respect to modality, in the absence of a satisfactory genuinely reductive account of modality. While I do think that much important work remains to be done with respect to realist ontologies of powers and dispositions, for now I shall consider it sufficient it to say that those who have realist inclinations toward modal discourse have good reason to consider non-reductive accounts of modality over eliminativism, and hence the mere fact that AMR is not a reductive account of modality makes for an unconvincing objection to AMR.

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[25] E.g., see Bigelow (1996: 48).

II. Does AMR offer the wrong direction of explanation?

A slightly different criticism comes from Ross Cameron's (2008) critique of Alexander Pruss' theistic Aristotelian version of AMR (more on theistic AMR in the next section). Cameron argues that if powers are the ontological grounds of possibility, you get the *order of explanation* back to front for causal power and possibility (2008: 276). Consider the following claims:

(1) It is true that there could possibly be black swans, *because* there are some beings with the power to bring it about that there are black swans.

(2) Some beings have the power to bring it about that there are black swans *because* it is possible that there are black swans.

(3) It is true that 2+2=5 is impossible *because* nothing has the power to bring it about that 2+2=5.

(4) Nothing has the power to make it true that 2+2=5 *because* it is impossible that 2+2=5.

On AMR, (1) and (3) seem to be the only correct explanations. However, while the question of whether (1) or (2) is more intuitive is not so clear, it seems certainly more intuitive to affirm (4) than to affirm (3). In this way, it appears that AMR gives the wrong explanation of modal claims.

I think this criticism works only if an AMR theorist *cannot* give a plausible account of why (2) and (4) seem to be genuinely explanatory. However, I think that an AMR theorist can in fact give such a plausible account. Timothy Pawl, in his (2008) dissertation, has a useful discussion of several senses in which we can mean 'because'. The two that are relevant to our discussion are firstly the 'because' that corresponds to

ontological grounding and secondly the 'because' that corresponds to *conceptual analysis*.[26] One example of the 'because' of ontological grounding, might be the claim,

(5) It is true that bachelors exist *because* bachelors exist

In this case, the *explanation* that occurs is the explanation of the *truth* of the claim bachelors exist, and the existing bachelors are appropriate explanation because they are the truthmakers for that claim. It can be said that the cases of (1) and (3) are, on AMR, clearly a case of ontological grounding; for in the case of (1), it is *because* there exist beings with the power to bring about black swans, that the possibility of there being black swans is *true*. With regard to (2), it is *because* there is nothing with the power to bring it about that 2+2=5 that it the necessity of it not being the case that 2+2=5 is true.

A different sense of 'because' and explanation is the sense of conceptual analysis. Consider:

(6) I am a bachelor *because* I am unmarried

In this case, the explanation is akin to a definition: it characterises the apt use of the concept 'bachelor' by giving what it is for something to be a bachelor, viz., an unmarried male. In this sense, I am a bachelor *because* what it is for me to be a bachelor is for me to be unmarried. This is the sense in which (2) and (4) are true: for what it is for something to have the power to bring it about that *p*, just is for *p* to be possible.

An objector might still reply, however, that conceptual analysis does not capture the sense in which the 'because' of (2) and (4) are used, because the sentences don't just affirm that *possibility* and *what something has the power to bring about* are

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[26] Pruss (2011: 269-270) makes a similar point.

conceptually coextensive; for if the two concepts are coextensive then the 'because' is symmetric, but (2) and (4) affirm that causal powers are *dependent* on possibility in an asymmetric way.[27] However, the AMR theorist can account for the asymmetric nature of (2) and (4) insofar as our knowledge of possibility is *epistemically* prior to knowledge of what the causal powers there are (i.e. *I know* that nothing can make 2+2=5, because *I know* 2+2=5 is impossible); this can be done while maintaining that causal powers come *metaphysically* prior to possibility.[28] Of course, this explanation will not budge someone who rejects the AMR theorist's *premise* that causal powers and possibility are coextensive; however, if the AMR theorist *can* defend such a premise (which I argue is in fact the case, in the next section), then I think the AMR theorist's response here does plausibly hold.

Perhaps it might be argued[29] that a claim like (3) still gets things intuitively wrong, because the truth *that 2+2=5 is impossible* is an a priori truth, while truths about what causal powers exist are existential claims: there *exist* no beings with the causal power to make it the case that 2+2=5. But intuitively, (3) is not an existential claim.[30]

I'm not sure how to evaluate this argument; however, one thing to note by way of response is that the fact that a modal truth entails ontological commitments is not unique to AMR; indeed, it is part and parcel of truthmaker theory for there to need to be some existent reality to which a true proposition corresponds. Our project was to find *truthmakers* for modal claims, and so the ontological implications (albeit negative

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[27] Thanks to John Maier for helping me to see this.
[28] Cameron in fact acknowledges the difference between epistemological and metaphysical priority at one stage in the dialectic (cf. 2008: 276, n38) but does not carry it further.
[29] Thanks to a conversation with Tristan Haze for this and the following point.
[30] Assuming, that is, that 2+2=5 is not a claim about existent platonic entities.

ones in this case) of a claim like (3) should not be counterintuitive. Another point worth noting is that such an objection may be motivated by the view that mathematical claims are *analytically* true or false,—analytic claims being such that, one way or another, they do not require ontological grounds, but are instead necessarily true or false in virtue of meaning alone.[31] If one adopts such a view, the class of analytic claims will not require truthmakers, and thus will be exempt from the scope of AMR's project, which is directed only at those modal truths in need of ontological grounds.

Finally, it might be argued that claims about powers are intuitively *contingent*—surely it is *contingent* what powers exist. But the claim that 2+2=5 is a *necessarily* false, and hence cannot be true in virtue of a *contingent* fact.

However, it should be clear that this argument does not work against AMR, because there is *no reason whatsoever* on AMR's account to assume that all the facts about powers are contingent. In fact, to suppose so would imply a vicious regress, because every contingent fact about a power would imply the existence of a further power that could bring it about that the first power was another way. Thus, if there are *some* necessary facts about powers, then there is no good reason to suppose they also do the work to ground other necessary facts, such as the fact that 2+2=5 is necessarily false.

In conclusion, then, the AMR theorist does not have to *deny* that (2) and (4) are true, because they can affirm that such cases are true on a reading of the 'because' in each case as one of conceptual analysis, or of epistemic priority. The AMR theorist

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[31] Cf. Armstrong (2004: 109-110). Something similar may be said here for tautologous and contradictory statements, and other logical truths.

doesn't risk circularity in affirming all of (1)-(4), either, if there are equivocal senses of 'because' in play in the sentences. Thus, I do not think AMR does in fact suffer from a misguided direction of explanation.

2.2   Does AMR preclude genuine possibilities?

In this section I consider whether, on AMR, what turns out to be possible and necessary is in fact plausible; specifically, I address AMR's preclusion of contingency in at least some laws of nature, as well as its prima facie preclusion of 'global' possibilities.

I. AMR precludes the contingency of the laws of nature?

One consequence of AMR is that many 'laws of nature' are metaphysically necessary. This is because according to AMR, powerful properties *just are* properties that support a particular set of powers for certain manifestations, and powers *just are* abilities for particular manifestations. As a result, many 'laws of nature' effectively amount to descriptions of the powerful nature of properties, and how they would or might behave in interaction with other properties. For instance, if we take the fact *that salt dissolves in water* to be a generalised description of the nature of the dispositional property instantiated by salt, it would as such be a necessary truth.

An objector might argue that this is 'too much necessity', and that laws of nature are contingent. For instance, surely it is possible that the powerful property instantiated by salt could have been such that it was governed by *different laws,*[32] such that, e.g., it ignites in water instead of dissolving.

However, the AMR theorist's response would be that such a possibility is merely epistemic. Indeed, the metaphysical necessity of laws *concerning powerful*

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[32] Contingent nomic conceptions of laws (e.g. Armstrong 1983), and Humean regularity theories (e.g. Lewis 1986a) of the laws of nature would accommodate such a possibility.

properties is the metaphysical necessity found in other *necessary a posteriori* truths; the mere fact that the nature of dispositions is uncovered empirically does not render their *identity* any less necessary than the identity of water and H_2O.[33] What the AMR theorist *can* grant is that the natural kind properties that existed might have been different, and that the world could thus have been populated by different powerful properties in virtue of which the world would operate according to very different nomic regularities—there might even be a substance very much like salt in such a world, call it schmalt, that did not dissolve in water. However, even in such a counterfactual situation, just as it would still be true that *water* is identical to *H2O*, it would still be true that *salt* dissolves in *water*. To assume otherwise would be to beg the question against the realist about powers and dispositions, by assuming that there are no such metaphysical identities.

II. Global possibilities.

A more obvious criticism is that AMR restricts metaphysical *possibility* in an unacceptable way. While causal powers, abilities and dispositions seem to do a good job of grounding *local* possibilities, e.g., Humphrey's possibly having won the election, my guitar possibly breaking, my children possibly being firemen, etc., there intuitively also are *global* possibilities. E.g., consider the following:

(1) *There could have been alien natural kinds (properties)*

(2) *All the (actual) contingently existing substances could have failed to ever exist*[34]

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[33] This point is from Bird (2001); who defends it in detail.

[34] It should be noted, as Pruss (2002) and Cameron (2008) do, that this claim is distinct from the more controversial claim that there could have been no contingent beings, simpliciter (i.e.,

(3) *The entire course of history could have been different*

First, recall that on GMR, each of these claims have truthmakers, namely, concretely existing worlds where there are alien natural kinds, a world consisting of nothing but empty spacetime, and a world bearing no similarities in its historical evolution to ours, respectively. But on AMR, there are no obviously forthcoming truthmakers forthcoming for (1), (2) or (3): (1) requires the existence of an entity with the power to bring about the existence of alien properties; and not just *some* alien properties, but a *plenitude* of alien properties (if such an entity were to yield the same possibilities as those on GMR, at least). (2) seems to require the existence of a necessary being, while (3) seems to require an atemporal being. It is not clear if such beings exist, and so it seems (1)-(3) are metaphysically impossible on AMR. But they seem intuitively possible (and what's more, given GMR they *are* possible).

There are two main ways in the literature that AMR theorists go by way of accounting for these global possibilities: *theistic Aristotelianism* takes as the truthmaker for (1)-(3) a *necessarily existing omnipotent* entity, viz., God. *Pure Aristotelianism*, on the other hand, accepts that at least some alien properties that are not metaphysically possible, because actually existing properties ('natural kinds') and their causal powers determine the limits of what is possible. While these options are not exhaustive, they are both viable rersponses for the AMR theorist, and I will examine each in turn.

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metaphysical nihilism). The current claim allows for other contingent beings to have existed, *had all the actual contingent beings failed to exist*.

2.2.1 Theistic Aristotelianism

A theist Aristotelian is committed to the standard ontology of AMR, with one extra: God. For the purposes of our discussion we may define God as an object that *necessarily exists* and is *omnipotent*. Omnipotence is often defined as something like 'the possession of all the logically possible powers that are logically possible for a being to possess"[35]. Such an unqualified appeal to the notion of logical possibility is potentially problematic, due to 'gaps' between logical and metaphysical possibility,[36] and so appropriate qualificatory clauses are needed.[37] Alternatively, we might think of an omnipotent being as the truthmaker for a principle of recombination akin to Lewis' *plenitude* principle on GMR. Whichever option one takes in defining omnipotence, a plenitude of possibilities,—including global possibilities,—are promised for the theist who commits to the existence of an omnipotent being.[38] Thus, a theist Aristotelian has an easy way of answering the challenge posed by global possibilities.

This, of course, is not quite yet an argument for the existence of God as classically conceived; however it does mean that someone who wants plenitude, and is willing to pay the ontological price, can get it on AMR.

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[35] Kenny (1979).

[36] Some examples of alleged logical possibilities include *the Eiffel Tower's being red and green all over at the same time;* or, *the Eiffel Tower's being red but not extended.* These 'logical possibilities' are so called because they do not involve contradictions.

[37] For example, one might add "size, shape, and colour permitting" to the end of the aforementioned definition of omnipotence.

[38] See Jacobs (2010) and Hawthorne (2001) for a brief discussion of the viability of such a principle of recombination for AMR theorists.

In the rest of this section I will consider two recent objections by Ross Cameron to the viability of theistic Aristotelianism. According to Cameron, "even if there is a God it is not acceptable to ground modal truth in the powers of God" (2008: 273). He has two basic arguments: first, that equating the powers of an omnipotent being with metaphysical possibility would render omnipotence unacceptably trivial, and secondly, grounding all possibility in God would render modal epistemology 'mysterious'. I'll examine each objection in turn.

I. Omnipotence is an unsuitable ground for possibility.

The Aristotelian theist is committed to the truth of the following biconditional: *p* is possible iff God has the causal power to bring it about that *p.* In addition, as established in S2.2, the theist is committed to a 'powers first' order of explanation, namely, God's powers (given his omnipotence) are the ontological ground for what is metaphysically possible. That is to say, (1)-(3) from above are true *because* God has the causal power to bring it about that they are true, and not vice versa. The first apparent problem for the theist, Cameron argues, is that grounding possibility in God's powers is counterintuitive, for it seems that the theist is committed to the view that *if* God had the power to make a square circle, then it would have been possible for a square circle to exist. Or, if God did not have the power to bring it about that my guitar existed, then it would have been impossible for my guitar to exist. But this is clearly counterintuitive—it seems possible that my guitar exist *simpliciter,* and impossible that a square circle exist *simpliciter.*

The objection is serious if it is in fact the case that God really *could* have had the power to make a square circle, or really *could* have lacked the power to bring

about my guitar. The best response for the AMR theist, then, is simply to deny these 'possibilities'; and for the AMR theist, this simply involves affirming that God *lacks* the causal power to bring it about that his powers could have been different.[39] If the AMR theist holds this, then it no longer seems problematic for the theist to affirm counterfactuals like, "If God had the power to make square circles, then square circles would have been possible"—because they are true *per impossibile,* as it were.

Cameron argues that this solution, however, is unsatisfactory. The reason is that it places *limits* on omnipotence that Cameron thinks a theist should not commit to; for on this account it is *a priori* false that an omnipotent God has the causal powers to make a square circle. Cameron thinks this is implausible. He argues (2008: 275):

> There is a perfectly good sense... in which God *can* do the impossible: He has the power to bring about things that do not obtain in any possible world. Pruss's account cannot accommodate the (epistemic) possibility of it being within God's powers to do something which, as a matter of metaphysical necessity, He does not do; so, since it seems to me to be a perfectly sensible thing for the theist to believe, I don't think even the theist should accept Pruss's account.

If Cameron's argument works then it follows, easily enough, that metaphysical possibilities and necessities are not to be grounded in God's omnipotence, because genuine omnipotence includes the power to bring about metaphysical impossibilities—and hence God's power cannot be the ontological ground for global possibilities and the like.

But does the argument make any sense? Cameron's key claim is that plausibly, God has the power for bringing about things "which, as a matter of metaphysical

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[39] This is just one way of saying that God's powers are *essential* to God, i.e., God could not failed to have had different powers.

necessity, He does not do". However, it does not even seem coherent for an Aristotelian theist hold this view. Recall that on AMR, it is necessary that *p* iff it is not possible that ~*p;* i.e., there exists nothing with the causal power to bring it about that *p* is not the case. Cameron's claim is, then, that God has the power for bringing about states of affairs that nothing has the causal power to bring about, which is simply incoherent. What does this mean? Cameron could indeed conclude that Aristotelian theism is incoherent given the view of omnipotence he advocates, but that would be proving too much, for what Cameron wants to argue is that *given* theistic Aristotelianism, God is not a satisfactory ground for global possibility and necessity. But if a particular view of omnipotence entails contradiction for a theist Aristotelian, it seems obvious that the better horn for the theist to take would be to reject Cameron's understanding of omnipotence, and simply hold that God does not have the powers to bring about metaphysical impossibilities (i.e. to make it the case that he had different powers).

II. An omnipotent god renders modal epistemology mysterious.

Cameron's second objection is that if possibility is grounded in God's power, then it has unsatisfactory consequences for modal epistemology. He writes, "giving God's capabilities priority, as Pruss does, makes it a mystery what His capabilities are, and hence makes it a mystery what is merely possible or necessary" (2008: 276).

But it seems like the theistic Aristotelian has a good story to give for why epistemic access to possibilities is available without knowing God's power: we have immediate epistemic access to a broad range of *local* causal powers through everyday experience (and even more through the sciences, etc.). These ground all the local

possibilities. It is *only* for the global and alien possibilities that we have to start looking to more causally and temporally distant causal nexuses, and in such cases our epistemic access to the distant possibilities is hazier, which corresponds to the relative epistemic inaccessibility of God's causal powers.[40]

Interestingly, it is worth noting that this latter objection seems to pose a much more serious problem for GMR than for theistic AMR, because GMR has no immediately forthcoming story about how concrete spatiotemporally isolated worlds are epistemically accessible. In fact, Lewis' primary defence against any such epistemic objection to GMR is that the *utility* of GMR's ontology in evaluating modal claims is itself good enough reason for committing to that ontology. Regardless of whether this is in fact a good argument, it is worth noting that it runs just as well if applied to the ontology of theistic AMR. In any case, Cameron's two arguments against the plausibility of theistic Aristotelianism do not seem to work.

III. A note on weak theistic Aristotelianism.

So far we have looked at the work that an ontology including the traditional God can do for AMR. Assuming that we want an atheistic ontology, what happens? Recall that the only relevant characteristics of God we looked at were *necessary existence* and *omnipotence,* which was what made God an adequate truthmaker for the global possibilities we considered. But it seems that in the absence of commitment to God, there seem to be plenty of candidates that can satisfy the same characteristics of necessary existence and omnipotence. For instance, perhaps at the beginning of time (say, the big bang) there was an entity that existed for a fraction of a second, and in that time had the potential to initiate any causal chain whatsoever, thereby filling out

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[40] I found this point made in several places, including e.g., Jacobs (2010), Pruss (2011).

the space of metaphysical possibility[41] (it would necessarily exist, because all necessary existence for some *x* amounts to is the nonexistence of anything with the causal power to prevent *x* from occurring). Or perhaps there is an infinite collection (perhaps a circular chain) of contingent beings stretching throughout time, with causal powers that collectively serve as the truthmakers for global possibilities.[42] The list goes on. We might call a view that adopts any of these ontological commitments 'weak theistic AMR', for it makes no *explicit* commitment to traditional theism, while accepting the existence of some object, or objects, with the causal powers necessary to ground the global possibilities that theistic AMR gives.

It might be argued that none of these weak theistic omnipotent object(s) are plausible to commit to, but I count it no less implausible, surely, than the existence of a plurality of concrete worlds. Prima facie, weak theism is quantitatively sparser in its ontology to GMR, and so is at least as plausible, if not more, than GMR.

To conclude this section, then, theistic (or weak theistic) Aristotelianism appears to provide one viable option for the AMR theorist in accounting for global possibilities.

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[41] Of course, if the entity existed in time, it would not be able to make true the possibility that the entire course of history had been different. In order for the entity to ground such a possibility, it would also have to be an *atemporal* being.

[42] Although if there is no necessary being, then (3) would not be possible.

2.2.2 Pure Aristotelianism

It might still be thought that a necessary omnipotent object(s) might still involve too much ontological commitment for comfort, and the AMR theorist might choose to refrain from committing to the existence of any being, or beings, possessing the properties of necessary existence and omnipotence. It now seems that this view would be committed to an explicitly narrower conception of possibility: global or alien possibilities are no longer metaphysically possible, for there are no causal powers that serve as their truthmakers. This view we can call *pure* Aristotelianism.[43]

An objection now arises for the pure Aristotelian: even in the absence of a necessary omnipotent being(s), there is still intuitive force to the above possibilities (1)-(3), for there is no good reason to consider them *impossible.* Further, assuming that one has independent reasons for rejecting theism, it seems that there is reason for considering AMR unsatisfactory, for it no longer gives truthmakers for the intuitive possibilities of (1)-(3).

I. Pure Aristotelianism accommodates alien properties.

However, a pure Aristotelian's first response would be that there are in fact a large scope of possibilities afforded even by the uncontroversially existing actual objects, and this scope includes (1), the possibility of alien properties, for the simple reason that the causal powers of existing objects plausibly involve many manifestations that are not actual, but nevertheless possible and likely alien.

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[43] So called because this view is close to the historical Aristotle's own view (Pruss 2011: 216).

It might be argued in response that while perhaps alien *objects* might be generated from actual properties,—insofar as actual properties can be recombined in different ways when powers come together and actualise manifestations,—alien *properties* cannot be generated from interactions between actual properties.

However, Borghini and Williams (2008) note that this view would simply be incorrect, for although the majority of first-order powers and powerful properties might have familiar manifestations (e.g. salt's dissolving in water), it is likely that a great many manifestations are simply unseen; certainly, there is no reason to think that they will *all* be familiar. Furthermore, the possibilities reached by *multiply iterated* powers, or causal chains, extend the range of possibility innumerably, far beyond the manifestations of first-order powers. Hence, an infinite quantity of alien properties are likely to be possible, as products of the multiply iterated manifestations of actual powers. In this way, (1) is accounted for, as for (3), for at least a large portion of history; for the dispositional properties present in the early history of the universe would have had plenty of unactualised manifestations to account for different futures.

An objector might reply by arguing that it is still very likely that there would be yet infinitely *more* alien properties than those accounted for on AMR, because plausibly there are properties that bear no causal connection to any actually existing (past, present or future) property or power. And *these* properties are unreachable from actual powers.

Two points can be made with regard to this objection. Firstly, alien possibilities completely unreachable from the actual world are rather tenuous possibilities (considering that alien properties themselves are tenuous to begin with). Secondly, it

could be argued, as Borghini and Williams do, that the very preclusion of such causally disconnected possibilities is a *virtue* of AMR, because an account of modality that did otherwise would be admitting possibilities that have *no grounding in the actual world whatsoever*, thus relinquishing a fully actualist conception of reality.

II. Agnosticism regarding distant possibilities.

The two other global possibilities considered above were *(2) All the (actual) contingently existing substances could have failed to ever exist;* and *(3) The entire course of history could have been different.* There seems to be no way out for an AMR theorist to accommodate (2), other than to commit to the existence of a necessary being; for on AMR, (2) is possible iff there exists *some* object *x*, with the causal powers to bring it about that (2) is true. Now, *x* itself would have to be either contingent or necessary, and if *x* were contingent, then *x* would be one of the actual contingent beings that failed to exist; which means that if *x* were a contingent being, then it would be the case that *x* had the causal powers to bring it about that *it itself* never existed, which does not seem possible. Thus, *x* needs to be a necessary being.[44] (3), on the other hand, seems to require commitment to the existence of the causal powers of an atemporal object, for similar reasons: if a temporal object *x* were the ground for the possibility that the entire course of history could have been different, then *x* would have to have the causal power to bring it about that it itself had been entirely different. But this is impossible. Hence *x* cannot be temporal. It seems that the pure Aristotelian, if she were to reject the existence of a necessary or atemporal being, would have to reject (2) and (3).

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[44] Cameron (2008) and Pruss (2011) both employ this argument, but to different conclusions: Cameron employs it as a reductio of AMR, while Pruss employs it as an argument for the existence of God.

Contessa (2010) accepts such a diagnosis, but argues that a pure Aristotelian would be simply *agnostic* regarding the existence of necessary or atemporal beings, and thus would be agnostic regarding (2) and (3) as well. In addition, Contessa argues that the only thing that any AMR theorist is committed to with regard to *any* possibility is the following conditional: *if* there are beings whose causal powers can be truthmakers for *p, then p* is true.[45] Because this principle itself has intuitive force, the very fact that there seem to be no truthmakers for claims like (2) and (3) is *itself* an eminently sensible reason for considering (2) and (3) false, or at the very least be agnostic about both the claims and their truthmakers. The challenge, then, is not to the AMR theorist but to the would-be objector, to find *independent* reasons for considering (1)-(3) to be true, *in the absence of* the objects and causal powers that would constitute genuine truthmakers for those claims on AMR.

III. Is conceivability a good guide to possibility?

One such independent reason for considering (1)-(3) to be genuine metaphysical possibilities might be *conceivability*. It is conceivable that all the actual contingent beings could have failed to exist, and it is conceivable that the entire course of history could have been different. Thus, it might be argued, these states of affairs are indeed genuinely possible.

However, the straightforward appeal to conceivability is open to direct counterexamples. Indeed, Lewis himself observes that it is *conceivable* that a man constructs a nineteen-sided polygon with a ruler and compass, in the same way a decagon might be constructed, although only one of these is genuinely possible (Lewis 1986: 90); Peter van Inwagen humorously considers in his (1998) whether it is possible

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[45] This point is from Contessa (2010: 344).

to imagine *transparent iron*. Given the dangers of conceivable impossibilities, the *conceivability* of all actual contingent beings failing to exist, or the entire course of history being different, appears to count for little.

IV. Conclusion

It may be concluded that the AMR theorist has two choices, broadly speaking, each with their attendant ontological costs and consequences for what counts as metaphysically possible. Theistic (or weak theistic) Aristotelianism offers a plenitude of possibilities to rival that of GMR, while pure Aristotelianism offers a more naturalistic alternative. The common denominator for both choices is that metaphysical possibility is determined by the causal powers that actually exist, and regardless of ontology, there is no strong independent reason forthcoming to consider the space of possibility to be determined by any other principle. (At the very least, conceivability is one principle that fails).

3   Conclusions

In this essay I have gone some distance towards evaluating, one the one hand, David Lewis' Genuine Modal Realism (GMR) and on the other, neo-Aristotelian Modal Realism (AMR) as set forth by Alexander Pruss. Both accounts are ambitious: their aim is to provide truthmakers for modal truths and a satisfactory conceptual analysis of claims of possibility and necessity. It is worth summarising the conclusions I arrived at regarding each view in a roughly comparative fashion.

I. The space of metaphysical possibility.

Both AMR and GMR offer an impressive *range* of metaphysical possibilities, both of a sort that accords broadly with our intuitions about the space of metaphysical possibility. On GMR, the principle of plenitude ensures the possibility of any combination whatsoever, while on AMR, two options are had, each respectable in its own light: a *pure* Aristotelian ontology allows for a wide range of possibilities, including alien properties. *Theistic* Aristotelianism grants a plenitude of possibilities to at least match those of GMR; specifically, God's powers ground the possibility that all the actual contingent beings failed to exist, the possibility that the entire history of the universe was different, and all other possibilities unreachable by the existing spatiotemporal substances and their causal powers. There is no major advantage had by either account, then, in terms of power to accommodate a plenitude of possibilities.

II. Truthmakers.

Both accounts take truthmakers seriously, and provide ontological grounds (or, in AMR's case, lacks of grounds) for claims of possibility and necessity. However, AMR, in my evaluation, provides a much better set of truthmakers than GMR. In §1.2 I examined GMR's truthmakers for de re modality, namely, *counterparts,* and concluded that there was no good account of the relevance of Humphrey's counterparts as truthmakers for Humphrey's de re modal properties, and that in addition, that there was significant intuitive force to their being wholly *irrelevant* to Humphrey. On the other hand, AMR identified the causal powers of actually existing objects as the truthmakers for de re modality; I evaluated these to be much better candidate truthmakers, for Humphrey's causal powers were intrinsic, causally related, and otherwise intuitively relevant to his modal properties.

III. Analysis.

Again, while both accounts provide an analysis of claims of possibility and necessity, GMR's analysis has the counterintuitive consequence of requiring us (along with Humphrey) to start taking our counterparts seriously, even diverting personal concerns and cares for what we can or might do to our counterparts and what they did or are doing. In contrast, AMR's analysis of de re modal claims about Humphrey preserves ordinary language intuitions about the intrinsicality and actuality of *abilities* and *capacities* as possessed by agents in the world. In §2.1 I examined the objection that AMR's analysis is explanatorily the wrong way around, and concluded that a careful consideration of two different kinds of explanation—conceptual analysis and ontological grounding—allow AMR a way to reconcile conflicting intuitions in different kinds of explanation.

IV. Ontological commitment.

As to be expected, both AMR and GMR have their share of ontological commitments. However, they vastly differ from one another. GMR's plurality of concrete, non-modal worlds stands in sharp contrast to AMR's firmly actualist but modally rich ontology of powers and dispositions. Which is preferable? On the one hand, reduction and qualitative parsimony is a virtue of any metaphysic; Occam's razor draws us to the leaner ontology if it can do the job just as well. But does GMR's ontology do the job just as well as AMR? In addition to the advantages AMR bears in terms of its truthmakers and its analysis, I argued in §1.2 that GMR's worlds entail revisions of some basic moral beliefs, a truly bizarre consequence, which could only be sensibly avoided by positing infinite duplicates of each world. On the other hand, we saw that AMR's non-reductive ontology met with no seriously revisionary consequences for ethics or semantics, and in addition reduced modality to the causal powers in the actual world. In my opinion, AMR's ontology is far less *costly* than GMR's in light of these considerations.

V. What about possible worlds discourse?

By way of a final remark, AMR's eschewal of *worlds* (concrete or otherwise) in its project of conceptual analysis and metaphysical grounding of modality may appear to raise a new question. Does the AMR theorist have the right to engage in possible worlds discourse? If not, then this is perhaps a serious disadvantage of AMR. However, I don't think there is anything here to worry the AMR theorist. First of all, an AMR theorist has nothing to fear about rejecting possible worlds, given that steps are being taken to develop formal accounts of powers-based modality that aim to be no less

theoretically powerful than the semantics of Lewisian counterpart theory[46]. On a more conciliatory note, however, an AMR theorist has no reason not to commit to some ontologically minimal conception of possible worlds (e.g. fictionalism, pictorialism, take your pick) in using worlds as a mere *heuristic* device in modal discourse. Nothing objectionable stems from such commitments, because the attendant problems that accompany ersatz accounts of possible worlds arise only if they are used to play some *substantive* role in one's account of modality, which the AMR theorist doesn't need. These suggestions do not exhaust the range of options available to the AMR theorist, but I think they illustrate that it doesn't really matter whether an AMR theorist eschews or adopts worlds in her ontology: there won't be serious costs either way. And if it seems that causal powers plus worlds is too much ontology, I think the better horn is still causal powers alone, and not worlds alone.

In conclusion, then: for those who are firmly *realist* with respect to modality, and in addition have actualist, naturalist (or theist!) and otherwise commonsense leanings, AMR is, I say, the better ontology to pay for.[47]

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[46] E.g., see Jacobs (2010) for a formal powers-based semantics for counterfactuals.

~ References

ADAMS, ROBERT MERRIHEW. (1974). Theories of Actuality. *Noûs, 8*(3), 211-31.

AQUINAS, THOMAS. (1948). *Summa theologiae* (T. F. o. t. E. D. Province, Trans.). New York: Benziger Brothers.

ARMSTRONG, DAVID M. (1997). *A world of states of affairs*: Cambridge University Press.

_____. (2004). *Truth and truthmakers*. Cambridge: Cambridge University Press.

BIGELOW, JOHN. (1988). *The reality of numbers: A physicalist's philosophy of mathematics*: Clarendon Press Oxford.

_____. (1996). Presentism and properties. *Philosophical Perspectives, 10*, 35-52.

BIGELOW, JOHN, & R. PARGETTER. (1990). Metaphysics of causation. *Erkenntnis, 33*(1), 89-119.

BIRD, ALEXANDER. (2001). Necessarily, salt dissolves in water. *Analysis, 61*(272), 267-74.

_____. (2007). *Nature's metaphysics: Laws and properties*: Clarendon Press.

BORGHINI, ANDREA, & NEIL E. WILLIAMS. (2008). A Dispositional Theory of Possibility. *Dialectica, 62*(1), 21-41. doi: 10.1111/j.1746-8361.2007.01130.x

BRICKER, PHILLIP. (2001). Island universes and the analysis of modality. *Reality and Humean Supervenience*, 27-55.

CAMERON, ROSS P. (2008). Truthmakers and modality. *Synthese, 164*(2), 261-80.

CARTWRIGHT, NANCY. (2007). What makes a capacity a disposition? In M. Kistler & B. Gnassounou (Eds.), *Dispositions and Causal Powers*: Ashgate.

CONTESSA, GABRIELE. (2010). Modal truthmakers and two varieties of actualism. *Synthese, 174*(3), 341-53. doi: 10.1007/s11229-008-9456-x

DIVERS, JOHN. (2002). *Possible worlds*. London: Routledge.

_____. (2004). Agnosticism about other worlds: A new antirealist programme in modality. *Philosophy and Phenomenological Research, 69*(3), 660-85.

DORR, CIAN. (2010). *How to be a Modal Realist*. Manuscript. Oxford University.

FINE, KIT. (1994). Essence and Modality: The Second Philosophical Perspectives Lecture. *Philosophical Perspectives, 8*(Journal Article), 1-16.

HAUSKA, JAN. (2009). Dispositions and Meinongian Objects. *Polish Journal of Philosophy, 1*(1), 45-63.

HAWTHORNE, JOHN. (2001). Causal Structuralism. *Noûs, 35*(s15), 361-78. doi: 10.1111/0029-4624.35.s15.16

HAZEN, ALLEN. (1979). Counterpart-Theoretic Semantics for Modal Logic. *The Journal of Philosophy, 76*(6), 319-38.

JACOBS, JONATHAN D. (2007). *Causal Powers: A Neo-Aristotelian Metaphysic*. PhD Dissertation. Indiana University.

_____. (2010). A powers theory of modality: or, how I learned to stop worrying and reject possible worlds. *Philosophical Studies, 151*(2), 227-48. doi: 10.1007/s11098-009-9427-1

KALHAT, JAVIER. (2008). Primitive Modality and Possible Worlds. *Philosophy, 83*(4), 497-517. doi: 10.1017/s0031819108000855

_____. (2008). Has Lewis Reduced Modality? *European Journal of Philosophy, 17*(4), 504-26. doi: 10.1111/j.1468-0378.2008.00321.x

KENNY, ANTHONY. (1979). *The God of the philosophers*: Oxford University Press, USA.

KRIPKE, SAUL A. (1980). *Naming and necessity*: Harvard University Press.

LEWIS, DAVID K. (1973). *Counterfactuals*. Oxford: Blackwell.

_____. (1986). *On the plurality of worlds*. New York, NY, USA: B. Blackwell.

_____. (1986). *Philosophical Papers, vol. II* (Vol. 2). Oxford: Oxford University Press.

_____. (1997). Finkish Dispositions. *The Philosophical Quarterly, 47*, 143-58.

LYCAN, WILLIAM G. (2007). The Metaphysics of Possibilia *The Blackwell Guide to Metaphysics* (pp. 303-16): Blackwell Publishing Ltd.

MANLEY, DAVID, & RYAN WASSERMAN. (2008). On Linking Dispositions and Conditionals. *Mind, 117*(465), 59-84. doi: 10.1093/mind/fzn003

McGLONE, MICHAEL. (2008). *The Humphrey Objection and the Problem of De Re Modality*. Manuscript. University at Buffalo.

MERRICKS, TRENTON. (2007). *Truth and ontology*: Oxford University Press, USA.

MILLER, KRISTIE. (2006). Morality in a branching universe. *Disputatio, 1*(20), 315-35.

MONDADORI, FABRIZIO, & ADAM MORTON. (1976). Modal Realism: The Poisoned Pawn. *The Philosophical Review, 85*(1), 3-20.

MUMFORD, STEPHEN, & RANI L. ANJUM. (2011). *Getting causes from powers*: OUP Oxford.

PAWL, TIMOTHY J. (2008). *A Thomistic account of Truthmakers for Modal Truths*. Department of Philosophy. PhD Dissertation. University of St Louis.

PLANTINGA, ALVIN. (1976). Actualism and possible worlds. *Theoria, 42*(1-3), 139-60.

_____. (1987). Two Concepts of Modality: Modal Realism and Modal Reductionism. *Philosophical Perspectives, 1*, 189-231.

PRUSS, ALEXANDER R. (2002). The Actual and the Possible. In R. Gale (Ed.), *The Blackwell Guide to Metaphysics* (pp. 317-33). Malden: Blackwell Publishing Ltd.

_____. (2003). David Lewis's Counterfactual Arrow of Time. *Noûs, 37*(4), 606-37. doi: 10.1046/j.1468-0068.2003.00453.x

_____. (2011). *Actuality, Possibility, and Worlds*. London: Continuum.

ROSEN, GIDEON. (1990). Modal fictionalism. *Mind, 99*(395), 327-54.

SHALKOWSKI, SCOTT. (1994). The Ontological Ground of the Alethic Modality. *The Philosophical Review, 103*(4), 669-88.

SIDER, THEODORE. (2001). *Four Dimensionalism: An Ontology of Persistence and Time*. New York: Oxford University Press.

_____. (2003). Reductive theories of modality. In M. J. Loux & D. W. Zimmerman (Eds.), *The Oxford Handbook of Metaphysics* (pp. 180-208): Oxford University Press.

_____. (2006). *Beyond the Humphrey objection*. Manuscript.

STALNAKER, ROBERT C. (1976). Possible worlds. *Noûs, 10*(1), 65-75.

VAN INWAGEN, PETER. (1998). Modal Epistemology. *Philosophical Studies, 92*(1), 67-84. doi: 10.1023/a:1017159501073