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Boardman, S.; Schoonen, T.

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ORIGINAL RESEARCH

Epistemologists of modality wanted

Samuel Boardman[1,2] · **Tom Schoonen**[3,4]

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Abstract
Metaphysics-first approaches dominate the current literature in the epistemology of modality. According to metaphysics-firsters, metaphysical theses have an important role in the justification of modal epistemologies. For example, the thesis that essentialist truths constitute the metaphysical grounds of modal truths is meant to have an important role in the justification of essentialist modal epistemologies. In this article, we argue against this approach. We first pick up some of the groundwork on behalf of the metaphysics-firsters and explicitly spell out potential arguments for their view. However, despite some initial plausibility, these arguments are ultimately found wanting. We conclude that the metaphysics-first approach lacks motivation and puts far too stringent demands upon modal epistemologists.

Keywords Epistemology of Modality · Metaphysics-first · Essentialism · Methodology · Levels-confusion

> *Even if someone had his head covered, Meno, he could tell from your conversation that you're beautiful*
>
> —Plato (Meno, 76b)

1 Epistemologists of modality wanted

Consider the following job description for an epistemologist of modality.

Epistemologists of Modality Wanted!

Samuel Boardman and Tom Schoonen have contributed equally to this work.

✉ Tom Schoonen
t.schoonen@uva.nl

1 Centre for Advanced Studies in the Humanities 'Human Abilities', Berlin, Germany

2 Institut für Philosophie, Freie Universität Berlin, Berlin, Germany

3 Institute for Logic, Language and Computation, Amsterdam, The Netherlands

4 Department of Philosophy, Universiteit van Amsterdam, Amsterdam, The Netherlands

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> In this position, you care about *actual* human agents' *actual* modal knowledge acquisition.[1] This means, in part, that you are careful not to make severe and unhelpful idealisations about the cognitive capacities that human agents in fact have. It also means that you are sensitive to psychological results that inform us about the methods that agents in fact use to make their modal judgements.[2] The first 'descriptive' stage of the project requires you to give an account of the methods that ordinary agents in fact use to make modal judgements. The second 'normative' stage of the project requires you to provide an account of what makes these methods knowledge-conducive.

This job description presupposes that modal epistemologists are methodological naturalists. Methodological naturalism is just the truism that if one cares about our actual methods of modal judgement, then, in part, one ought to look to our best sciences to figure out what those methods are. It is not the controversial Quinean doctrine that epistemology is merely a chapter of psychology (Quine, 1969). Rather, it suggests that modal epistemologists should inform themselves of modal psychology. In other words, modal psychology is a chapter of the epistemology of modality. And, as we will see throughout this paper, there is a lot of relevant empirical work up for grabs.

This job description is in line with what Mallozzi (2021a, S1940) calls a *means-first* approach to the epistemology of modality. Mallozzi thinks that means-first approaches mischaracterise the task that modal epistemologists face.[3] According to Mallozzi, the correct way to describe the job of epistemologists is *metaphysics-first*. It isn't just Mallozzi that adopts this approach. In fact, metaphysics-first approaches are gaining popularity in the field. Some consider it the main approach to the epistemology of modality. For instance, in a recent special issue of *Synthese—New Directions in the Epistemology of Modality*—"most authors […] endorse this novel approach" (Mallozzi, 2021b, S1846–S1847).[4,5]

[1] See, e.g., Goldman (1994, p. 305), Jenkins (2008, pp. 695–696), Balcerak Jackson (2016, p. 57), and Leon (2017, pp. 247–248).

[2] See Kornblith (1994), Peacocke (1999, p. 1), and Jenkins (2008, p. 696).

[3] Mallozzi's main complaint against means-first approaches is that "it is not one of these theories' primary aims to tackle the issue of the source of metaphysical modal truth; nor, a fortiori, to undertake the study of essence and its relationship to modality" (2021a, S1940). It just seems obvious to us that this is neither here nor there. The study of essence, and tackling issues concerning the source of metaphysical modal truths, is simply not within the purview of modal *epistemologists*. But if you don't share that intuition, note that the objection assumes the sort of metaphysics-first conception of the epistemology of modality that we argue against throughout this paper.

[4] Mallozzi (2021a) is the main explicit defender of the methodology of metaphysics-first in the epistemology of modality. Mallozzi provides the most worked out, and to our knowledge only, explicit defense of the metaphysics-first approach. We have therefore chosen to engage with her work. However, see also Hale (2003), Lowe (2012), Tahko (2012), Hale (2013), Tahko (2017, 2018), Jago (2021) and Kment (2021). There is, of course, room for substantial disagreement about which authors endorse the metaphysics-first approach as it often operates as an implicit assumption. Our hope is that this paper contributes to a greater awareness of the issue in subsequent literature.

[5] We should stress that though this is a recent and important *trend*, it is of course not the case that every modal epistemologist accepts metaphysics-first. There have also been epistemologies of modality focusing more on, e.g., everyday modal statements (e.g., (Vetter, 2016, 2023)); the function of modal judgement (e.g., Nolan 2017); the actual procedures and relevant psychological results (e.g., Jenkins (2008), Nichols (2006), Nolan (2017); the role of perception (Nanay, 2011; Strohminger, 2015) or imagination (see discussion in

Despite its popularity, a thorough investigation of this approach is lacking and its proponents often just hint at motivations. In this paper, we pick up some of the groundwork on behalf of the metaphysics-firsters and explicitly spell out potential arguments for their view. However, these arguments are found wanting and the ultimate goal of this paper is to rehabilitate the intuitive job description for epistemologists of modality given above, one that does not put metaphysics first.

The paper is structured as follows. §2 considers what the metaphysics-first slogan might mean in more precise terms. Admissible interpretations of the slogan must merit the importance that its proponents attach to it. In that sense, we require that the slogan is substantive. §3 looks at some motivations that metaphysics-firsters hint at, develops them, but shows that ultimately these suggestions don't motivate going metaphysics-first. §4 sets motivational issues aside and argues that there is no version of metaphysics-first that is true and substantive. In §5, we suggest that metaphysics-firsters seem to confuse what epistemologists need to know in order to provide an epistemology of modality with what ordinary agents need to know to acquire modal knowledge. We conclude in §6, by reflecting on the relation between the metaphysics of modality and the epistemology of modality.

2 The metaphysics-first job description

Intuitive as the above job description may be, it is not the main approach to the epistemology of modality in the current literature. In fact, most theorists nowadays adopt a radically different, metaphysics-first approach (cf. Mallozzi, 2021b, sec. 1.4.2 for an explication of this approach). In this section, we give a charitable interpretation of the job description of modal epistemologists from a metaphysics-first perspective.

2.1 Everything (epistemological) must go?

The metaphysics-first slogan goes as follows:

Metaphysics-First (MF)

> In order to elucidate our acquisition of modal knowledge, modal epistemologists must first have a good grip upon what modal knowledge is about.
>
> (Mallozzi, 2021a, S1937)

MF looks intuitive and reasonable. But epistemologists of modality can meet its requirements with great ease: modal knowledge is about possibilities and necessities. In other words, modal knowledge is about the modal status of propositions (events, objects, etc.). Proponents of **MF** must therefore intend a more stringent requirement. Acceptance of **MF** ought to have some methodological consequences, otherwise the slogan doesn't merit the importance that its proponents give it. This means that any adequate defence of **MF** has to vindicate a *substantive* version of that slogan.

Footnote 5 continued
§4.3). The existence of these alternative approaches is consistent with the observation that metaphysics-first is a rising trend.

Note that proponents of **MF** embrace this requirement of substance. For example, Mallozzi (2021a, S1937–S1938) tells us that "we cannot hope to explain how we know the truths of a given domain without some conception of what constitutes the truths of that domain." If this is right, any epistemologist that doesn't learn the lessons of **MF** can't explain modal knowledge acquisition. But explanation of (one aspect or another of) modal knowledge acquisition just is the bare minimum of the job description of any modal epistemologist. So, metaphysics-firsters' refrain is: no metaphysics-first, no research.

But it is far too ambitious of metaphysics-firsters to claim that there is no hope of modal epistemology without **MF**. There are several extant success stories in the recent literature that don't meet the requirements of **MF** (e.g., Roca-Royes, 2017; Balcerak Jackson, 2018; Gregory, 2020). Of course, it may be that metaphysics-firsters think that everything that doesn't conform to their doctrines must go. If so, we prefer to target a more moderate position that is easier for metaphysics-firsters to support. Given this, we *don't* require a substantive version of **MF** to establish that modal epistemology stands and falls with **MF**. If we show that metaphysics-firsters fail to support a more moderate proposal, we show that the more ambitious 'everything must go' project also fails.

2.2 Towards a substantive version of MF

To formulate a substantive version of **MF**, we set aside metaphysics-firsters negative ambitions. We turn instead to their positive ambitions. That is, we require substantive versions of **MF** to support the positive theoretical work that metaphysics-firsters put the slogan to. Given that, we now consider the positive theoretical work that Mallozzi puts **MF** to.[6]

In order to motivate her essence-based modal epistemology, Mallozzi makes several transitions from claims about modal metaphysics to claims about modal knowledge that are *prima facie non sequiturs*. Consider two representative examples.[7]

[6] Remember from footnote 4 that we focus on Mallozzi because she is the only metaphysics-firster who explicitly sets out and defends the methodology. Though many other epistemologists of modality seem to adopt similar methodologies without explicit discussion.

[7] Other examples include "we cannot hope to explain how we know the truths of a given domain without some conception of what constitutes the truths of that domain" (Mallozzi, 2021a, S1937-S1938); "[m]etaphysical investigation guides us to formulate principled criteria for modal knowledge based on essentialist truth" (idem, S1938); "[p]utting modal metaphysics first means elucidating the subject matter of modal knowledge as the basis to elucidate how we gain modal knowledge" (idem, S1939); "discussing the nature of X before addressing the issue of how we know about X is a generally profitable methodology (because an answer to the latter largely depends on what X is)" (ibid.); "[b]y locating the source of metaphysical necessity in facts about the fundamental make-up of the world, my modal metaphysics first approach secures us with a principled non-arbitrary criteria for judging modal matters" (idem, S1941); "Fine's essentialist insight completes Kripke's inferential story: the bridge-principles support knowledge of metaphysical necessity because they embed essential properties" (idem, S1943); and "we *should* choose, as a *general guideline* and where possible, to start our investigation of the epistemology of X by first tackling the metaphysics of X. And the reason why we should do so, as mentioned, is that our metaphysical findings about X will help us account for how we know about X." (Mallozzi, 2021b, S1847-S1848, original emphases). It isn't always clear what these statements mean (we discuss some of them in more detail

> [W]e learn from the modal metaphysics that the epistemology of modality depends on the epistemology of essence.
>
> (Mallozzi, 2021a, S1939)

> There is a distinctive source of metaphysical necessity, which is located in the nature of things - specifically, in their essential properties. Accordingly, knowledge of necessity should be understood primarily in terms of essentialist knowledge.
>
> (idem, S1938)

This seems to suggest that theories in the epistemology of modality just drop out of theories in modal metaphysics. However, that some modal metaphysics is true doesn't settle the facts about our methods of modal knowledge acquisition. This is just an instance of a more general point: epistemological theories don't just drop out of metaphysical theories. This has been the default position at least since Kripke (1980), who has shown that the modal status of some proposition (a metaphysical issue) doesn't entail anything substantive about our acquisition of knowledge of the modal status of that proposition (an epistemological issue). Of course, Mallozzi doesn't claim that necessities are always knowable *a priori* or that contingencies are always *a posteriori*. But she does attempt to derive epistemological conclusions from metaphysical premises.

We take it that this is no naïve error. Rather, it is the *modus operandi* of metaphysics-firsters to transition from metaphysical to epistemological claims with the help of **MF**. We therefore expect metaphysics-firsters to embrace the following notion of substantivity.

Substantive

> A version of **MF** is substantive just in case it renders licit the otherwise illicit transitions from modal metaphysics to modal epistemology.

This allows us to appreciate what is at stake in the debate over **MF**. If **MF** is true and substantive, then metaphysical truths more or less settle epistemological questions about our acquisition of knowledge of modal truths. Epistemologists of modality have to answer to modal metaphysicians. We think this is a dark prospect. It took decades to overturn the verificationist attempt to make metaphysicians and semanticists dance to their epistemological tune. Metaphysics-first is just the other side of that coin.

However, there is still hope. In §4, we argue that no version of **MF** is both true and substantive. Although there are considerable points of contact between metaphysics and epistemology, the two disciplines are more autonomous than verificationists and metaphysics-firsters like to think. But first, in §3, we consider some of the motivations that metaphysics-firsters appeal to in order to support some (substantive) version of **MF**.

Footnote 7 continued
below). But taken together, these quotes make it clear that Mallozzi intends to move from claims about modal metaphysics to claims about how we acquire modal knowledge in quite an immediate fashion.

3 Motivations for metaphysics-first

Mallozzi hints at two motivations for **MF**.

> [D]iscussing the nature of X before addressing the issue of how we know about X is a generally profitable methodology (because an answer to the latter largely depends on what X is).
>
> (Mallozzi, 2021a, S1939)

> The [metaphysics-first] project might thus be seen broadly as a contribution to the attempt to meet, in the area of metaphysical modality, Christopher Peacocke's *Integration Challenge*.
>
> (ibid., original emphasis)

We discuss these motivations in turn. Although we attempt to draw out the most charitable interpretation of these statements, we argue that they ultimately fail to support **MF**.

3.1 A generally profitable methodology?

Suppose that it is true in general that it is helpful to discuss the nature of X before we address the issue of how we know about X. This would support Mallozzi's claim that epistemologists of modality ought to discuss the nature of modal facts in advance of their provision of epistemologies. However, it is implausible that it is helpful to discuss the nature of X before we address the issue of how we know about X.

Consider the case of morality. Is it generally profitable to know the nature of morality before addressing the issue of how we acquire moral knowledge? The suggestion is ambiguous between an insubstantive and a substantive requirement. We agree with the insubstantive requirement that moral epistemologists ought to know that moral knowledge is about the moral status (e.g., good, bad, racist, imprudent) of actions, events, agents, and so forth. But that truism cannot motivate any substantive version of **MF**. In contrast, the requirement that moral epistemologists should wait for meta-ethicists to settle deep questions about the nature of morality, like whether moral truths are natural or non-natural, is substantive. But if moral epistemologists were to wait for meta-ethicists to settle those deep questions before investigating the epistemology of morality, then they would be waiting a long time. It is surely more profitable to just get on with giving an epistemology of morality. While the meta-ethicists argue amongst themselves, moral epistemologists can (and often do) look to psychological results that elucidate the methods ordinary agents in fact use to make moral judgements (e.g. Haidt, 2001, 2007). And once they've got a reasonable descriptive picture of the methods of moral judgement, epistemologists can begin their normative account of what makes these methods knowledge-conducive.

As we have it, moral epistemologists can, of course, look to meta-ethics to support their theories. What we doubt is that moral epistemologists *must* do this. And we also doubt that it is generally profitable for moral epistemologists to do this *before* engaging in their epistemological business. More generally, we do not claim that metaphysics

is irrelevant to epistemology. We aren't epistemology-firsters! Our point is rather that epistemology isn't subservient to metaphysics.

3.2 Motivation from integration?

Another motivation that Mallozzi (2021a, S1939) hints at is that **MF** plays a special role in addressing the *integration challenge* (Peacocke, 1999; Roca-Royes, 2021; Sjölin Wirling, 2021). The integration challenge (abbreviated as '**IC**') has it that the metaphysics and epistemology of some domain (e.g., mathematics, modality, etc.) ought to integrate. However, whatever integration amounts to, we doubt that **IC** motivates **MF** because **IC** doesn't play favourites between metaphysicians and epistemologists. Let us elaborate.

There are two quite general approaches one might adopt in one's attempt to meet **IC**. Metaphysics-firsters (i) adopt their favourite metaphysics and then (ii) suggest an epistemology that nicely integrates with it. Essentialists (e.g., Tahko, 2018; Jago, 2021; Kment, 2021; Mallozzi, 2021a) are the quintessential metaphysics-firsters, as we have seen. In contrast, epistemology-firsters (i) adopt their favourite modal epistemology and then (ii) suggest a modal metaphysics that nicely integrates with it. Expressivists (e.g., Craig, 1985; Blackburn, 1993) are the quintessential epistemology-firsters, which they inherit from their logical positivist roots (see also Thomasson, 2020). However, as Peacocke (1999)[p. 1] says in the original formulation of the problem, neither of these two approaches take precedence. The goal is integration *regardless* of whether that involves the prioritisation of either metaphysics or epistemology or neither. So, in and of itself, **IC** does *not* support going metaphysics-first.

Perhaps the motivation for **MF** should simply be thought of as follows. The most reliable methodological approach to **IC** is to go metaphysics-first. That is, if one wants an attractive package of a modal metaphysics and a modal epistemology, then the best methodological choice one can make is to start with the metaphysics. However, we argue that an *evidential asymmetry* between the empirical evidence for metaphysical theories and the empirical evidence for epistemological theories suggests that even this claim is false.

Arguments from evidential asymmetry appeal to the following principle:

Asymmetric Revision

> Given two theories Φ and Ψ that have to integrate, if Φ has more empirical support than Ψ, then one ought to meddle with Φ less than one meddles with Ψ.

In other words, if one theory Φ is "well-confirmed" and has an "impressive […] track record" in comparison to Ψ, then the empirically supported theory Φ should be meddled with to a proportionally lower degree than its comparatively empirically unsupported theory Ψ (Wilson, 2020, p. 18 & p. 92, respectively).[8] Arguments of this form have been applied to different pairs of theories where metaphysics was a

[8] Although we grant that total evidence is what matters, the default position is that there is no asymmetry in *non-empirical* evidence between theories in metaphysics and epistemology. The burden is on metaphysics-firsters to show that there is an asymmetry in non-empirical evidence that is significant enough to offset the substantial asymmetry in empirical evidence.

member of the pair. For example, Devitt (1998 pp. 499–500), himself a card-carrying metaphysics-firster, employs it in the comparison of semantics and metaphysics; Wilson (2012) employs it in the comparison of metaphysics and linguistics; and Wilson (2020) employs it in the comparison of metaphysics and physics.[9]

We suggest that there is also an evidential asymmetry between theories in metaphysics and epistemology. In particular, epistemological theories enjoy far more empirical support than metaphysical theories. So, if anything then, the most reliable methodological approach to **IC** is to start with an epistemology and then look for a metaphysics that is compatible.

We agree with Wilson (2020, p. 18) that, in general, there is little empirical evidence that is relevant to fundamental metaphysics. For example, we take it that the existence of essences is an extra-scientific matter.[10] However, the situation is radically different when it comes to epistemology, where there is a lot of relevant empirical evidence up for grabs. The fact that not all epistemologists rely on this empirical support (or maybe even fail to recognise it as such) does not detract from the fact that the empirical evidence is there.

For instance, consider the substantial empirical support in favour of the claim that imagination plays a role in modal judgement. Children judge that possible events could happen, whereas impossible events could not, because "[t]heir imagination is constrained by real events they have observed in the past" (Harris, 2021, p. 471; see also Shtulman & Carey, 2007). Moreover, there is empirical evidence that human and non-human animals use imagination in order to distinguish between (im)possible courses of action (see for example Pezzulo & Castelfranchi, 2009; Pezzulo & Cisek, 2016; Pezzulo, 2017) . If animals in fact form their modal beliefs using imagination, and if some of those modal beliefs amount to knowledge (i.e., if we reject radical modal scepticism), then these psychological results constitute substantial empirical evidence in favour of some sort of imagination-based epistemology of modality. More generally, there is a lot of empirical evidence relevant to modal belief acquisition coming from modal psychology that epistemologists can (and should) take into account (e.g., Shtulman & Carey, 2007; Shtulman, 2009; Phillips & Knobe, 2018).

There is an evidential asymmetry between theories in the epistemology and metaphysics of modality. We now want to suggest a moderate upshot of this evidential asymmetry. If one wants an attractive package of a modal metaphysics and a modal epistemology, then the best methodological choice one can make is to start with an empirically well-supported theory in modal epistemology. Note that we do not here endorse any sort of epistemology-first programme. We denounce illicit transitions from epistemological premises to metaphysical conclusions. Our goal has merely

[9] This is nicely inline with an intuitive basic principle of belief revision: make changes to your belief system that meddle with beliefs that are at the edge of the 'web' (e.g., Quine, 1951, see also Hansson, 2022 for a variety of formal approaches incorporating this principle).

[10] Mallozzi might disagree with this (see, e.g., Godman et al., 2020, Mallozzi, 2021a). However, see arguments by (Schoonen (2020a)[8.7] and Priest (2021) with regards to this aspect of Mallozzi's view.

been to demonstrate that prioritising modal metaphysics isn't the most promising methodological approach to Peacocke's **IC**.[11]

4 Against metaphysics-first

This section argues that there is no true and substantial version of **MF**. Consider again some of Mallozzi's glosses of **MF**:

> [W]e cannot hope to explain how we know the truths of a given domain without some conception of what *constitutes* the truths of that domain.
> (Mallozzi, 2021a, S1937–S1938, emphasis added)

> Putting modal metaphysics first means prioritizing questions concerning the proper domain and scope of metaphysical modality, and what *grounds* this kind of modal truth as opposed to other modalities. (idem, S1938, emphasis added)

It is clear that Mallozzi doesn't think of **MF** as the requirement that epistemologists of modality have some grasp of which propositions are modal truths. Rather, she takes **MF** to require that they have some grasp of what *constitutes* or *grounds* modal truths.

We therefore take it that Mallozzi endorses the following thesis:

Hyperintensional-Metaphysics-First (HMF)

> In order to elucidate our acquisition of modal knowledge, epistemologists of modality must grasp what grounds modal truth in advance of their contribution to epistemologies of modality.

Assuming that **HMF** is substantive, the trouble is that its demands are too stringent.[12]

It isn't difficult to demonstrate this. The job description of epistemologists of modality includes two stages. The first descriptive stage requires you to give an account of the methods that ordinary agents in fact use to make modal judgements. The second normative stage requires you to provide an account of what makes those methods knowledge-conducive.

Clearly, the descriptive stage doesn't require one to have an account of what grounds modal truth. It is just an empirical matter what our methods of modal judgement are. You won't catch us rampaging through psychology departments to tell them that they've got to stop studying modal judgement until metaphysicians settle the grounds of modal truth (cf., Lewis, 1991, pp. 58–59).

This leaves the normative stage. We will first show that an externalist picture of what makes our methods of modal judgement knowledge-conducive does not require epistemologists to know the grounds of modal truth.

[11] The observant reader will have noted that, in fact, these motivations would *not* support any *substantive* version of **MF**. At most, they would support **MF** in a context of discovery and even this, we've argued, fails.

[12] In fact, we doubt that it is substantive. Mallozzi wants to conclude that those that have modal knowledge must have essentialist knowledge. But the fact that an epistemologist needs to know that essential truths are the grounds of modal truths doesn't show that ordinary knowers must have essentialist knowledge. We get back to this in Sect. 5.

4.1 Normative externalism

On a simple reliabilist picture of knowledge-conducive methods, the task that the normative stage poses to the epistemologist of modality is to show that our methods of modal judgement tend to produce more true than false beliefs in normal circumstances of use (cf., Goldman, 1979). To complete this task, an epistemologist only has to have an *extensional* conception of the set of modal truths. That is, epistemologists just need to know what the modal truths are. Given knowledge of which judgements a method produces, knowledge of the modal truth is sufficient for the epistemologists to determine whether a method produces more true than false beliefs. So, with such externalist assumptions, normative accounts of what makes our methods of modal judgement knowledge-conducive needn't mention the grounds of modal truth.

There is a slight complication. Epistemologists (of modality) often use the same methods to acquire modal knowledge as their subjects. These methods are fallible and don't result in omniscience about modal matters. This means that, like ordinary agents, epistemologists aren't in a position to settle the truth-value of *every* modal proposition. Metaphysics-firsters might attempt to leverage this complication into an argument in favour of **HMF**. They might suggest that epistemologists ought to look to the grounds of modal truth to fill in gaps in their modal knowledge. Suppose that essence facts ground modal facts (cf., Fine, 1994). The first step, for the epistemologists, is then to acquire knowledge of the essence facts. The next step is to acquire knowledge of principles that connect essence facts to modal facts, like

From Essence to Necessity

> If it is essential to x being F that it is G, then necessarily anything that is F is G.
> (Mallozzi, 2021a, S1942)

Finally, one needs to put the essence facts and the connecting principles together to infer the modal facts. This is meant to improve the epistemic position of epistemologists of modality by giving them knowledge of modal facts that they didn't have before. This in turn is meant to allow them to show that some of our methods of modal judgement are reliable that they couldn't otherwise have shown to be reliable.

The main issue with this suggestion is that there is no reason to think that the facts that ground modal facts are more perspicuous than the modal facts themselves. Consider the view that essence facts ground modal facts. It is far from obvious that it is easier to acquire knowledge of essence facts than of modal facts (cf. Tahko, 2018). Just like their opponents then, metaphysics-firsters don't enjoy omniscience vis-à-vis the modal facts.

Another issue with this suggestion is that, regardless of their lack of modal omniscience, epistemologists of modality can show that our methods of modal judgement are knowledge-conducive. They don't need to settle the truth-value of *every* modal proposition to show that some method is reliable. There are edge-cases in which the truth-value of some modal proposition is unknown (like whether philosophical zombies are possible). But a few edge-cases aren't going to make the difference between a method that tends to produce more true than false modal beliefs and a method that doesn't.

If some epistemologist adopts an externalist approach to the normative stage of the project, they needn't know what grounds modal truth. So, **HMF** isn't true given an externalist interpretation of the normative stage.

4.2 Normative internalism

Does **HMF** look more plausible given an internalist interpretation of the normative stage? We show that there is no quick argument to **HMF** from internalist assumptions.

Access internalists have it that S's belief in *p* is justified only if (a) there is a reason R that stands in a epistemic support relation to *p* and (b) S has access to R and (c) S has access to the fact that R is a reason (cf., BonJour, 1980). So, in order to show that S has internalist justification for some modal belief, the epistemologist of modality just needs to show that the subject has adequate reasons in the sense that conditions (a), (b), and (c) are met. We will argue that the epistemologist does not need to know what grounds modal truths in order to show that a subject has adequate reasons.

HMF suggests that epistemologists of modality have to know what grounds modal truths in a *metaphysical* sense of 'grounds'. But internalism just suggests that modal epistemologists have to know what grounds modal truths in an *epistemological* sense of 'grounds'. These two requirements often come apart.

Of course, these requirements sometimes *do* coincide. There are some reasons that are also metaphysical grounds of the contents of the relevant beliefs (hereafter, 'metaphysical grounds' abbreviates this longer phrase). The fact that Socrates exists is an epistemic reason that supports that {Socrates} exists. Regardless of this, to motivate a general move from internalist assumptions to **HMF**, metaphysics-firsters require the stronger claim that reasons are *always* metaphysical grounds. If there are some reasons that aren't metaphysical grounds, then epistemologists of modality can highlight those reasons without knowledge of what grounds what.[13]

There are lots of reasons that aren't metaphysical grounds. For example, **that you have seen that x is F** is reason to believe **that x is F**. This is because (a) **that you have seen that x is F** makes **that x is F** probable, (b) you have access to the fact **that you have seen that x is F**, and (c) you have access to the fact that: **that you have seen that x is F** is a reason to believe **that x is F**.[14] However, the fact **that you've seen that x is F** is not a metaphysical ground of the fact **that x is F**, given most values of 'x' and 'F'. For instance, **that you've seen that Dave is awake** doesn't ground the fact **that Dave is awake**. It is more often the opposite. That is, the content of your belief (i.e., **that x is F**) is a partial ground of the content of your reason (i.e., **that you've seen that x is F**)

[13] Metaphysics-firsters might complain that epistemologists of modality ought to be able to elucidate every reason that can support some modal belief. Since some of those reasons are metaphysical grounds, epistemologists need to know what grounds what. However, it isn't plausible to require that epistemologists elucidate every reason that can support some modal belief. That is an insurmountable task. It is more plausible that epistemologists of modality ought to elucidate those reasons that *in fact* support the relevant subjects' modal beliefs. But this just brings us to the question of whether the relevant subjects in fact support their modal beliefs with metaphysical grounds. If there is a plausible route from propositional to doxastic justification in an internalist framework, then it is just an empirical question which (doxastic) reasons are justifiers. We have significant doubts that the empirical wheel of fortune spins in favour of metaphysics-firsters. But we leave it open for metaphysics-firsters to show otherwise.

[14] We assume these standard internalist claims for purposes of argument.

since visual perception is factive. The fact **that Dave is awake** is a partial ground of the fact **that you've seen that Dave is awake**. Unsurprisingly, it is therefore no part of internalism itself to require that elucidation of reasons is elucidation of metaphysical grounds.

The reason internalism doesn't require that reasons are metaphysical grounds is that the epistemic relation between a reason and the belief that it supports is often weaker than a relation of metaphysical explanation. To have a reason isn't always to have a metaphysical explanation of the fact that you believe (though we admit that it sometimes is, since metaphysical explanation is factive). So, **HMF** isn't true given an internalist interpretation of the normative stage.

4.3 The problem of modal epistemic friction

So far, we have considered normative externalism and normative internalism in order to see if **HMF** is true and in both cases we concluded that it isn't. Perhaps we should consider other normative questions that epistemologists of modality need to address. Maybe the *problem of modal epistemic friction* can support **HMF**. Again, we turn to Mallozzi (2021a) to locate an argument of this sort.

> [A] modal metaphysics, essence-first approach helps us to address what might be regarded as the central problem for modal epistemology [i.e., the problem of modal epistemic friction]. We need suitable constraints for modal reasoning […] to ensure […] that they result in true beliefs. […] It is thus crucial to understand what the correct constraints for each particular modal subfield are, and in virtue of what they lead us to correct modal judgement.
>
> (S1940-41)

> [T]his bit of essentialist theorizing might prove fruitful *to get a better grip on the constraints* for the sub-field of metaphysical modality—for those, I maintain, are a function of essentialist truth. By locating the source of metaphysical necessity in facts about the fundamental make-up of the world, my modal metaphysics first approach secures us with a principled nonarbitrary criteria for judging modal matters.
>
> (S1941, emphasis added)

Mallozzi's talk of constraints comes from, as she acknowledges, Vaidya and Wallner's (2021) problem of modal epistemic friction. They argue that in order to acquire modal knowledge through some means, those means have to operate under substantive constraints. In general, the problem of epistemic friction can be formulated as follows (Vaidya and Wallner, 2021, S1921):

Problem of Modal Epistemic Friction (PMEF)

(i) What is it that creates modal epistemic friction in an account of modal knowledge?
(ii) How do we have epistemic access to that which creates modal epistemic friction?

The question we now turn to is whether metaphysics-firsters can use the problem of modal epistemic friction to motivate **HMF**. Although Mallozzi hints that there is an

argument from the problem of modal epistemic friction to **HMF**, she doesn't herself give that argument. Our goal is to construct the strongest version of the metaphysics-first position in order to ultimately undermine it. To that end, we are going to show that there is a somewhat plausible argument that employs an upshot of the problem of modal epistemic as a premise. Ultimately however, we demonstrate that the argument is unconvincing.

We begin with an argument that the problem of modal epistemic friction has an interesting upshot.

(P1) Reliabilism is true.[15]

(P2) If reliabilism is true, then modal epistemologists have to show that agents have a reliable method that tracks the epistemic friction creators in order to answer **PMEF-(ii)**.

(P3) To show that agents have a reliable method that tracks the epistemic friction creators, modal epistemologists have to know what the epistemic friction creators are.

(C) Modal epistemologists need to know what the epistemic friction creators are.

In short, in order to address **PMEF-(ii)**, epistemologists need to know the epistemic friction creators. This is a significant upshot of **PMEF** since metaphysics-firsters can plausibly use it to construct an argument for **HMF**, as we will now show.

Here is an argument that starts with the upshot of the **PMEF** and attempts to conclude in favour of **HMF**,[16]

(P1') Modal epistemologists need to know what the epistemic friction creators are.

(P2') The epistemic friction creators are constitutive truths.

(P3') Constitutive truths are essential truths.

(P4') Essential truths ground modal truths.

(C') Modal epistemologists need to know the metaphysical grounds of modal truths.

The first premise is, as we've shown, an upshot of **PMEF**. The second and third premises are taken from Vaidya and Wallner (2021). The fourth premise is a core thesis of essentialism (cf., e.g., Fine, 1994; Mallozzi, 2021a; Vaidya & Wallner, 2021). Since the argument is valid, and its premises look plausible, it seems that we have an argument for its conclusion, which just is **HMF**. However, we argue that the argument is unsound since (**P2'**) is false. That is, not every epistemic friction creator is a constitutive truth.

[15] Metaphysics-firsters can give a similar argument that starts from the assumption of (e.g.) access internalism. Hence, the debate between internalist and externalist is orthogonal in the present context.

[16] Note that since the argument contains premises in addition to the upshot of the **PMEF** we do not suggest that the **PMEF** alone supports the metaphysics-first approach. Those that accept the relevant upshot of the problem of modal epistemic friction needn't accept the argument if they reject one of its other premises (as we do). Thanks to an anonymous reviewer for urging us to stress this.

A helpful case study to motivate our rejection of (**P2'**), is to look at *imagination-based* epistemologies of modality. Independently of imagination's role in the epistemology of modality, philosophers of imagination agree that imagination needs to be restricted in order for it to be epistemically useful, where imagination is epistemically useful if it can provide an agent with justification for the relevant belief (Kind, 2016; Kind and Kung, 2016). In the context of the epistemology of modality, this means that imagination needs to be constrained such that we won't imagine impossibilities (cf. Byrne, 2007; Kung, 2010). However, some imagination-based epistemologies of modality fall victim to something akin to **PMEF**. For example, Schoonen (2020b) points out that for certain theories of imagination, e.g., that of Kung (2010), to play a significant role in the epistemology of modality, they need to be constrained by "prior modal knowledge" (p. 647). This is, of course, closely related to the conclusions drawn by Vaidya and Wallner (2021[§3]) in relation to **PMEF**.

In the literature on imagination-based epistemologies of modality, this problem has motivated approaches that looked at *architectural constraints* (Kind and Kung, 2016, p. 2), these are constraints on imagination *from our cognitive architecture*. An example of this are *recreative* accounts of imagination (Currie and Ravenscroft, 2002; Nichols and Stich, 2003; Goldman, 2006; Balcerak Jackson, 2018; Gregory, 2020). On such accounts, imagination *recreates* or *simulates* other cognitive capacities (e.g., our perceptual and motor capacities). According to recreativists, when we imagine a red square there is activity in our perceptual system—similar to that of when we are actually perceiving a red square—without the corresponding external stimulus (i.e., without the distal stimulus, e.g., the actual red square; but more importantly, without the proximal stimulus, e.g., stimulation of the relevant sensory transducers). The upshot of these accounts is that imagination is *inherently* constrained, as it inherits the constraints of the perceptual system: whatever it is that constrains online perception, also constraints (perceptual) imagination.

Given the upshot (**C**) of **PMEF**, modal epistemologists that suggest we use recreative imagination to acquire modal knowledge need to know what the constraints on imagination are. Fortunately, empirically oriented philosophers of imagination have begun that work (e.g., Nichols, 2006; Jones & Wilkinson, 2020; Williams, 2021; Jones & Schoonen, 2023). The crucial point for our purposes is that this work demonstrates that the constraints of our online perceptual system are a subset of the constraints to imagination. Hence, the constraints of our online perceptual system are epistemic friction creators. Note, however, that the constraints to online perception are not constitutive truths (they aren't even truths at all). We will discuss two examples of these constraints to emphasise this.

A first example of the relevant constraints are features of our perceptual system, e.g., our neuro-physiological make-up. As Jones and Schoonen (2018) point out, "we cannot imagine something being both red and green all over, which might indicate that such a situation is impossible. However, it could equally be a result of our limited embodied perspective. A creature with two visual systems might think otherwise." This idea has been further developed by Rucińska and Gallagher (2021[p. 23]), who argue "that imagining can be both augmented and constrained by motoric processes rooted in bodily, body-schematic and affective processes, as well as by explicit motor actions."

Of course, these features of our neuro-physiological make-up are not constitutive truths.

A second example is that our imagination, as well as our perception, is constrained by the constraints of *core cognition* (cf. Carey 2009). To give one example, one of the constraints of core cognition is that 'objects don't pass through objects'.[17] As imagination is also constrained by the constraints of core cognition, this principle is an epistemic friction creator for the modal knowledge we acquire through imagination. However, 'objects don't pass through objects' is false as an unrestricted principle (think of quantum events), thus principles like these are not constitutive *truths*.

So, on (recreative) imagination-based epistemologies of modality, the epistemic friction creators are *not* constitutive truths. (**P2'**) of the above argument is thus false and we can reject its conclusion: epistemologists don't need to know the metaphysical grounds of modal truths. That is, **PMEF** does *not* support **HMF**.

This concludes our arguments against **HMF**. Neither psychologists nor epistemologists of modality need to know the grounds of modal truth to complete the descriptive stage of the project—that is, to give an account of the actual methods that in fact underlie modal judgement. And as we have just shown, modal epistemologists needn't know the grounds of modal truth to complete the normative stage of the problem—that is, to give an account of what makes our actual methods of modal judgement knowledge conducive.

Throughout this section, we have argued that there is no true and substantive version of **MF**. In doing so, we assumed that **HMF** is substantive. But in footnote 12, we flagged doubts about this. The reasons for our doubts generalise. Before we conclude, we want to elaborate on these doubts.

5 Level confusions in modal epistemology

MF is a claim about the knowledge that *epistemologists* need to have in order to know that ordinary agents know modal truths. However, in order to make licit the illicit moves from metaphysics to epistemology, what metaphysics-firsters require is a claim about what *ordinary agents* themselves need to know. This is because metaphysics-firsters want to support particular modal epistemologies. But modal epistemologies (at least, those of interest) concern the modal knowledge of ordinary agents. For instance, Mallozzi wants to support an essence-based modal epistemology. But her essence-based modal epistemology says that ordinary agents infer their modal knowledge from their (putative) knowledge of essence. Whether epistemologists need to have knowledge of essence is irrelevant to the issue of whether ordinary agents in fact have knowledge of essence and in fact use it to infer their modal knowledge.

Yet metaphysics-firsters seem to think that conclusions about what epistemologists have to know are somehow relevant to the correct account of what ordinary agents have to know. This is a particularly vivid instance of something akin to what Alston (1980)

[17] The full story is much more detailed than we can discuss here. See Boardman and Schoonen (2023) for a theory of core imagination.

has called a "level confusion" in epistemology. Alston highlights that we can construct a hierarchy of epistemic levels by employing and iterating epistemic operators.

(i) ϕ
(ii) x knows that ϕ
(iii) x knows that y knows that ϕ[18]
(iv) …

To exhibit a level confusion is to mix up the epistemic requirements that one must meet to know a proposition at some level (e.g., (i)) with the epistemic requirements that one must meet to know a proposition at some higher level (e.g., (ii)). In terms relevant to our purposes, epistemologists attempt to explain ordinary agents' first-order knowledge of some domain—i.e., to explain ordinary agents' knowledge of propositions at level (i). But then, as we've seen above, epistemologists have to know propositions at level (ii). And since epistemologists have to *provide* justifications for their knowledge of propositions at level (ii) to their peers in the journals (rather than just *be* justified), epistemologists are in effect often required to be in a position to know propositions at level (iii).

To confuse the epistemic requirements that modal epistemologists face with the epistemic requirements that ordinary agents face is just to fall into a level confusion in modal epistemology. Metaphysics-firsters start from the assumption that *modal epistemologists* have to know that agents know that ϕ—i.e., modal epistemologists themselves have to know propositions at level (ii). We agree. Metaphysics-firsters further argue that to know propositions at level (ii) modal epistemologists have to know the metaphysical grounds of modal truth. We have given arguments against that claim in §4. But let us now suppose, for the sake of argument, that epistemologists have to know the metaphysical grounds of modal truth. Our present point is that *even if this were true*, it wouldn't warrant any conclusions about what it takes for *ordinary agents* to know propositions at level (i). The epistemic requirements for knowledge of propositions at level (i) are simply distinct from the epistemic requirements for knowledge of propositions at level (ii) and from the epistemic requirements for providing justifications of knowledge of propositions at level (ii).

6 Conclusion: modal metaphysics and modal epistemology

Metaphysics-firsters hint at various motivations for **MF**. For instance, Mallozzi suggests that it is part of a generally profitable methodology and that it helps to address the integration challenge. After filling in some of the details of the relevant arguments on behalf of metaphysics-firsters, we have shown that they nonetheless fail. **MF** is no part of a generally profitable methodology and it is not part of the most methodologically promising approach to solving the integration challenge. But worse than this, we have shown that there is no true and substantive version of **MF**. Temporarily granting that **MF** is substantive, we have shown that it puts unnecessary demands upon modal epistemologists. Internalists and externalists alike needn't know what grounds modal truth

[18] As opposed to Alston, we intend to leave it open whether x and y are co-referential.

to give successful modal epistemologies. Furthermore, auxiliary considerations, like the problem of modal epistemic friction, fail to motivate a metaphysics-first approach. Modal epistemologists can address the problem of modal epistemic friction without knowledge of what grounds the modal truth. Worse still, we can even grant that **MF** doesn't place undue demands upon modal epistemologists. The fact that modal epistemologists have to know what grounds the modal truth doesn't show that ordinary agents need to know what grounds the modal truth. To think otherwise is to succumb to a level confusion in epistemology of modality.

We have tried to show that metaphysics shouldn't take center stage in the epistemology of modality. Exactly what role metaphysics should have is presumably best decided as the result of a back-and-forth between those, like us, that advocate a more moderate role for metaphysics and those, like Mallozzi, that advocate a more radical role for metaphysics. We hesitate to prescribe the role of metaphysics in modal epistemology here. Different investigations often turn out to be relevant to each other in surprising ways. Our goal has been to highlight and undermine some instances of metaphysical overreach.

Might we, in the process of arguing against metaphysics-first have strayed into a complete rejection of modal metaphysics, like the verificationism that we rejected above? No. For one, we didn't anywhere argue that epistemology should come first in the sense that we ought to derive metaphysical conclusions from epistemological premises.[19]. Nor do we claim that metaphysics is nonsense. In fact, we think that metaphysics *is* relevant to epistemology and *vice versa*. As we have highlighted above, epistemologists must make some metaphysical assumptions, e.g., that there are modal *truths*. If there are no modal truths, then theories of modal *knowledge* are otiose. We also think that modal epistemologists ought to pay more attention to the truth-conditions of modal statements (Kratzer, 2012). As Williamson (2020, p. 5) puts it, truth-conditions are the targets that our methods have to hit. Hence, "if a cognitive theory specifies methods quite inappropriate for shooting at the target specified by semantic theory, presumably something is wrong with at least one of the two theories" (ibid.). But to admit that epistemologists ought to pay attention to semantics is not accept the diktats of metaphysics-firsters.[20]

Here is the take home message. The link between metaphysics and epistemology is much more subtle than verificationists and metaphysics-firsters like to think. Modal epistemologies don't just drop out of theories in modal metaphysics. Although modal

[19] We sympathise with Fodor's complaint.

> It looks to me as though the argument depends on inferring a metaphysical conclusion […] from an epistemological premise […]. I have spent the last forty years or so asserting that such inferences are invalid; indeed, ill-advised. Well, they are. (Fodor, 2008, p. 10, fn. 14)

[20] We mention this here as some might think that provision of truth-conditions falls into the domain of metaphysics. One reviewer helpfully points out that epistemologists ought to investigate the connection between our means and the targets that those means aim to hit. We agree. The metaphor is familiar from Williamson, (2020, p. 5) It is revealing that Williamson is no metaphysics-firster. His point is simply that semantic theories that propose truth-conditions must integrate with epistemological theories that propose our methods of knowing those truth-conditions (Benacerraf, 1973). But again, to recognise moderate connections between metaphysics and epistemology is not to endorse the metaphysics-first programme.

metaphysics and modal epistemology have important connections, neither can replace the other.

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