Introduction/Abstract

Recent work on the imagination has stressed the epistemic significance of imaginative experiences, notably in justifying modal beliefs. An immediate problem with this is that modal beliefs appear to admit of justification through the mere exercise of rational capacities. For instance, mastery of the concepts of square, circle, and possibility should suffice to form the justified belief that that a square circle is not possible, and mastery of the concepts of pig, flying, and possibility should suffice to form a justified belief that a flying pig is possible. In this paper, I consider three ways to defend the epistemic role of imagination in the face of this problem. One is that modal beliefs simply admit of justification by two separate sources: rational capacities and imaginative experience. Another is that while beliefs about logical or conceptual modality can be justified entirely by rational capacities, beliefs about metaphysical modality require imaginative experiences. The third, which I defend, is that imagination is relevant in the first instance not to modal knowledge but to modal understanding: even where imaginative experience is unnecessary for the justification of modal beliefs, it is indispensable for directly grasping certain modal propositions.

1. Imagination and Modal Epistemology: The Problem of Epistemic Preemption

Empiricism in epistemology is the view that knowledge is based on experience, or perhaps more precisely, that beliefs are justified by experience. As the terminological kinship might suggest, empiricism is particularly plausible for the empirical domain: empirical beliefs (e.g., that there is a tree outside my window) are justified, at least in part, by perceptual experiences (e.g., as of a tree outside my window).
In other domains, empiricism is more daring. In the moral domain, for instance, there is a long tradition of moral rationalism according to which moral beliefs are justified a priori. Mastery of the concepts of genocide and wrongness should suffice, on the face of it, to form a justified belief that genocide is wrong; experience with genocide would only confirm what is thus a priori justifiable. At the same time, even in this area there exist an empiricist tradition. Following Hume, many moral philosophers have held that moral knowledge is ultimately based on sentiment. Here it is emotional experience, or affective experience, rather than perceptual experience that is claimed to ground moral knowledge. Although the resulting “sentimentalism” is sometimes meant just as a descriptive psychological thesis about the contingent processes by which moral beliefs are formed, at other times it is proffered as a normative epistemological thesis about what justifies moral beliefs. The idea is that some emotional experiences offer the kind of non-inferential justification for evaluative (including moral) beliefs that perceptual experiences do for empirical beliefs (Döring 2007). Thus, experiencing indignation in response to reading about the German genocide of the Herrero and Namaqua people of modern-day Namibia generates non-inferential justification for the belief that the German genocide of the Herrero and Namaqua people was wrong. The rationalist treatment of this case is of course very different: for a subject competent with the concepts of genocide and wrongness, exercise of rational capacities suffices to establish that genocide is wrong; when such a subject then becomes aware of the German genocide of the Herrero and Namaqua, they are in a position to justifiably acquire the belief that the German genocide of the Herrero and Namaqua was wrong.

Rationalism is perhaps most antecedently plausible for mathematical and logical knowledge, where it appears that the exercise of rational capacities is all it takes to form justified beliefs. Mastery of the concepts of 2, 4, addition, and equality seems sufficient to acquire a justified belief that \(2+2 = 4\). One may or may not have an “intuitional experience” as of 2 plus 2 equaling 4, but it is not necessary to have such an experience to acquire the justified belief that \(2+2 = 4\). There are of course empiricist holdouts here too (e.g., Kitcher 1984). But rationalism about mathematical knowledge is by and large the default position among philosophers. The same is true of logical beliefs, such as the belief that everything is self-identical. On the face of it, all you need to justifiably form this belief is to possess the concept of identity and exercise certain rational capacities in drawing out what the concept involves – notably, that identity is reflexive.

Modal beliefs seem to belong in one group with such logical beliefs and other a priori beliefs admitting of justification purely by the exercise of rational capacities. My beliefs that a flying pig is possible and that a square circle is impossible can be justified, it seems, by the sheer exercise of rational capacities. Just as reflection on what is involved in something qualifying as genocide and what is involved in something qualifying as wrong should suffice to acquire the justified belief that genocide is wrong, reflection on what is involved in
something qualifying as square, what is involved in something qualifying as a circle, and what is involved in something qualifying as possible should suffice to acquire the justified belief that a square circle is not possible. And such rational capacities seem sufficient also for forming a justified belief that a flying pig is possible: perhaps the conceptually competent subject, having reflected on what is involved in something qualifying as a pig and in something qualifying as flying, and failing to find the kind of incompatibility we find when reflecting on what it takes to be square and what it takes to be a circle, forms the belief that a flying pig is possible. Such a subject would be in a position to justifiably acquire modal beliefs without ever bothering to exercise their imaginative capacities – it is not mandatory that they try to imagine a flying pig or a square circle for them to justifiably form the beliefs that the former is possible and the latter is not.

In general, it is unclear what role imaginative experience could play in modal epistemology that would not be preempted by our rational capacities. Call this the problem of epistemic preemption. It is a problem for the idea that imagination has an important role to play in modal epistemology, an idea which has garnered increasing attention in recent philosophical discussions of the imagination (see many articles in Kind and Kung 2016 and Badura and Kind 2021). The problem affects imaginative experience in the modal domains just as it does affective experience in the moral domain, intuitional experience in the mathematical domain, and perhaps other types of experience in other traditionally a priori domains.

If the problem of epistemic preemption cannot be resolved, then imagination would have to rest content with being relevant to modal inquiry only in the context of discovery, not the context of justification. In this scenario, imagination would be relevant to the process by which modal conjectures are formed, but not to the actual justification of modal beliefs. What this means is that imagination would not be doing any epistemic work, but only causal work, in modal cognition. To see how unsatisfactory that is, consider the famous case of Friedrich Kekulé, famed for discovering the molecular structure of benzene (Kekulé 1865). As Kekulé himself tells it, he made the discovery by daydreaming a snake biting its own tail. But of course, the evidence he presented for of his model made no mention of snakes, concentrating instead of isomers, derivatives, and the like. If imagination’s role in modal inquiry were but a fancy version of daydreams’ role in Kekulé’s chemical inquiry, it would not be a properly epistemic role.

In what follows, I will consider three approaches to the problem of epistemic preemption. The first appeals to pluralism about sources of epistemic justification for modal beliefs, the second to pluralism about kinds of modal beliefs up for justification, and the third to pluralism about the epistemic values imagination could play a role in. I will argue that the third option is the most promising for a defender of the epistemic role of imagination. According to the view I will defend, imagination is crucial for modal
understanding even if it is not for moral knowledge. I start, however, with a few remarks on imagination and rational capacities.

2. Imagination and Rational Capacities

Imagination reports come in two broad groups: objectual and propositional. For instance:

   (R1) S imagines a brown dog
   (R2) S imagines that a dog is brown

It is possible to hold that although imagination reports fall into two groups, the imagination states therein reported are of one and the same kind. But phenomenologically speaking, it does seem that there are two kinds of state corresponding to these reports. The objectual report picks out a mental state which (i) essentially exhibits the specific sensory profile it does (e.g., with brown and dog-shaped qualities) and (ii) does not necessarily employ concepts in representing what it does (it is possible for a child to imagine a brown dog who does not yet possess the concepts of dog and brown). The propositional report, in contrast, picks out a mental state which (i) necessarily employs concepts and (ii) does not essentially, but at most accidentally, exhibit any sensory profile.

We may call the kind of imaginative state reported in R1 “sensory imagination” and the kind reported in R2 “propositional imagination.” There are difficult questions, which I will set aside here, about what if any constitutive connections there might be between the two. What I will have to say about imagination and its epistemic role is not sensitive to the difference between them or their ultimate relationship.

In the philosophy of emotion, it is customary to characterize emotion types in terms of their “formal object” (Kenny 1963): the formal object of fear is danger, the formal object of grief is loss, the formal object of indignation is injustice, and so on. But in truth, mental state types other than emotion also have characteristic formal objects. A longstanding view holds that belief represents its content sub specie veri (“under the guise of the true”) while desire represents it sub specie boni (“under the guise of the good”). We might put this by saying that the formal object of belief is truth whereas the formal object of desire is goodness (in the most generic sense of “goodness”). Within this framework, we can also ask what the formal object of imagination is. And an alluring idea in the present context is that the formal object of imagination is precisely possibility: imagination represents its content “under the guise of the possible” (cf. Yablo 1993). If this is right, then just as in fearing a snake we experience the snake as dangerous, in imagining a snake we experience the snake as possible, and just as in believing that grass is green we commit ourself to the actual truth of the proposition <grass is green>, in imagining that grass is purple we commit ourselves to the possible truth of the proposition <grass is purple>. An advantage of construing the
possible as the formal object of imagination is that it creates a clear presumption in favor of the epistemic relevance of imagination to modal knowledge.

It is interesting to note here the structural psychological difference between (a) the belief that possibly, grass is purple and (b) the propositional imagination that grass is purple. Compare: there is obviously a difference between fearing flying and believing that flying is dangerous. Although both states encode a certain kind of awareness of flying as dangerous, they do so in different ways: the fear represents flying under the guise of the dangerous, while the belief represents the proposition <flying is dangerous> under the guise of the true. In consequences, these are two distinct mental states, and it is possible to have one without the other. Many people are afraid of flying who do not believe that flying is dangerous; conversely, many believe that climate change is dangerous without experiencing occurrent fear regarding it. Something similar holds of modal beliefs (e.g., that possibly, grass is purple) and propositional imagination (e.g., that grass is purple). Both states constitute mental commitment to the possibility of grass being purple, but the commitment is effected in different ways. The belief constitutes commitment to the truth of the proposition <possibly, grass is purple>, whereas the imagination constitutes commitment to the possible truth of the proposition <grass is purple>. Commitment to truth and commitment to possible truth are two different stances, or attitudes, that a person can take toward a proposition. So what we have here are two different mental states, with different attitudes and different contents, despite the evident overlap.

When I speak of “exercise of imaginative capacities,” I have in mind an effortful attempt to enter a state of sensory imagination or a state of propositional imagination. The attempt may fail, but the failure, too, would be the result of exercising one’s imaginative capacities. When I try to imagine a parrot the size of the Eiffel Tower, I succeed with flying colors. On the kind of modal empiricism floated in §1, this successful exercise constitutes at least prima facie justification for believing that a parrot the size of the Eiffel Tower is possible. When I try to imagine a square circle, in contrast, I fail categorically; but for the modal empiricist, this exercise, issuing in failure as it does, also provides prima facie justification for a modal belief – this time the belief that a square circle is impossible.

Now, when I speak of “exercise of rational capacities,” what I have in mind is exercise of psychological capacities associated with reason. Perhaps the paradigmatic capacity of reason is reasoning. But another rational capacity, which has particularly interested philosophers, is the capacity to analyze concepts one possesses and make explicit certain aspects of these concepts’ implicit structure. For instance, someone who possesses the concept of a vixen can work out, purely through reflection on that concept, that vixens are females, that vixens are not prime numbers, and much more. And someone who possesses the concept of a square can work out, purely through use of their rational capacities, that a
square can be divided into four right triangles, that a square is an equilateral figure, and also that a square cannot be round.

In the case of exercise of imaginative capacities, a natural model we considered is that successful exercise of these capacities generates prima facie justification for a positive modal belief (a belief that something is possible), while a failed exercise generates prima facie justification for a negative modal belief (a belief that something is impossible). In the case of rational capacities, a natural model reverses this order: successful exercise of the relevant capacities, identifying as it does an incompatibility between what it takes to be F and what it takes to be a K, generates prima facie justification for the negative modal beliefs that a K that is F is impossible; while a failed exercise, wherein no incompatibility could be unearthed, generates prima facie justification for the positive modal belief that a K that is F is possible. These are only natural model, however; they are not compelled on us by the phenomena, at least for all that was said here.

Much more can be said about our rational and imaginative capacities, of course. The above remarks are only intended to give these notions sufficient texture to conduct the succeeding discussion with something relatively concrete in mind.

3. Two Different Kinds of Justification?

In the face of the problem of epistemic preemption, one might attempt to secure a role for imagination in modal epistemology by insisting that, just because modal beliefs can be justified by the exercise of rational capacities, it does not mean that they cannot also be justified by the exercise of imaginative capacities. Perhaps imagining a flying pig gives some justification – if only prima facie, defeasible justification – for believing that flying pigs are possible, even if it is not necessary to imagine a flying pig to justifiably believe this. (And perhaps, more speculatively, trying but failing to imagine a square circle provides some justification for believing that a square circle is impossible – again, even if it is also possible to form this justified belief without exercising one's imaginative capacities.) After all, many beliefs can be justified in more than one way – even empirical beliefs. I can acquire a justified belief that there’s a tree outside my window on the basis of my perceptual experience of the tree, certainly; but I can also acquire it, justifiably, on the basis of reliable testimony, on the basis of a firm recollection, and so on. By the same token, it may be that modal beliefs can be justified both on the basis of rational capacities and on the basis of imaginative experience.

The idea here is to wield a certain justificational pluralism to secure an epistemic role for imagination. But I think this will not work. The problem is that imagination on its own does not seem to provide the right justification – a deep enough justification – for
modal beliefs. To see why, consider the analogy with mathematical and moral beliefs. Imagine a person who forms the belief that \(2+2 = 4\) as follows. She has a picnic basket with two flaps on top. Every time she goes on a picnic, she lifts the left flap and puts 2 apples in the basket, then lifts the right flap and puts in 2 more. When she lays out the contents of the basket at the picnic, she finds there are 4 apples in the basket. This happens so many times that she infers, by enumerative induction, that 2 plus 2 equals 4. She proceeds to hold this belief pending future encounter with disconfirming counterexamples. Likewise, imagine a person who comes to believe that genocide is wrong on the basis of witnessing a number of genocides and noticing that each has been wrong, on each occasion experiencing indignation about what they are witnessing. This person then performs an inductive inference to the belief that genocide is wrong – again, pending future disconfirmation.

We can’t help feeling, I think, that there is something epistemically defective about this way of acquiring the beliefs that \(2+2 = 4\) and that genocide is wrong. Perhaps repeated observation of wrong genocides does lend support to the notion that all genocide is wrong, but we can’t shake the feeling that the notion that genocide is wrong doesn’t need this kind of support, and that someone who only reached the conclusion that genocide is wrong in this way is missing something. Likewise for the mathematical case: the belief that \(2+2 = 4\) doesn’t need repeated empirical confirmation to be justified, and someone who holds the belief only on that basis is missing something.

One aspect of what these epistemic agents are missing is justification for believing the necessity of “genocide is wrong” and “\(2+2 = 4\).” A posteriori empirical justification of the sort they have is the kind that justifies belief in contingent propositions; but belief in necessary propositions calls for something that goes beyond the justification of belief in contingent propositions and speaks to the fact that the truth of these propositions does not depend on contingent matters of fact.

I want to be a bit more explicit here. We can speak of justification for believing the proposition \(<\text{necessarily, } p>\) versus the proposition \(<p>\). But we can also speak of justification for believing in the necessary truth of \(<p>\) versus in the mere truth of \(<p>\). Being necessarily true and being contingently true are two properties of the proposition \(<p>\) - two species, or “determinates,” of being true. Corresponding to these properties of propositions are epistemic properties of belief: using somewhat scholastic terminology, we might say that a belief that \(p\) can be apodictically justified and or it can be merely justified. Being apodictically justified and being non-apodictically justified are two different (epistemic) properties. What I want to claim is that only when a subject has apodictic justification for belief in the proposition that \(<p>\) can they go on to form a justified belief in the proposition \(<\text{necessarily, } p>\).
Now, a priori exercise of rational capacities does produce *apodictic* justification for the beliefs that $2+2 = 4$ and that genocide is wrong; whereas experience is incapable in principle of generating apodictic justification. Accordingly, the person whose justification for believing that $2+2 = 4$ and that genocide is wrong is based on exercise of rational capacities can go on to form the justified beliefs that *necessarily*, $2+2 = 4$ and that *necessarily*, genocide is wrong; whereas the person whose justification for the beliefs that $2+2 = 4$ and that genocide is wrong is based on (emotional or intuitional) experience cannot.

The same seems to apply to modal beliefs. On the one hand, (1) modal beliefs seem like moral and mathematical beliefs in being necessarily true if true at all. On the other hand, (2) imaginative experience does not seem fit to generate the *apodictic* justification called by beliefs in such propositions. Therefore, (3) imaginative experience does not seem fit to generate the kind of justification modal beliefs call for. This is my main argument against justificational pluralism as a solution to the problem of epistemic preemption – we may call it the *argument from apodictic justification*. Let’s go through its premises more slowly.

Regarding the first premise, it is not some contingent matter, to do with the idiosyncrasies of the actual world, that makes square circles impossible. It is not as if, had some contingent facts shaken out otherwise, square circles would be possible. No, it is a *necessary truth* that square circles are impossible. Likewise for the belief that flying pigs are possible. Since it’s not *nomological* modality that we’re dealing with here (flying pigs are nomologically *impossible*, after all), it is not some contingent matter of fact that makes flying pigs possible. No change to the contingent make-up of the *actual* world would exclude there being another world, “accessible” from ours, in which pigs fly.

It is to capture the intuition that what is impossible is necessarily impossible (and what is possible is necessarily possible) that philosophers working in modal logic have developed **S4** and **S5**, in which the accessibility relation is cast as transitive and the basic modal logic **M** is augmented with the axioms $\Box p \rightarrow p$ (for **S4**) and $\Diamond p \rightarrow \Box \Diamond p$ (for **S5**). Such modal logics are needed because, intuitively, they model the real structure of the modal domain more accurately than ones that do not include these principles. (Compare: although three different complete and consistent geometries can be devised, only the Riemannian describes accurately the real structure of space. All three are equally good qua pieces of *pure* mathematics, but one is superior qua *applied* mathematics. **S5** is like Riemannian geometry in this respect.)

If this is right, then when we believe that flying pigs are possible, or that square circles are *impossible*, it is good if our justification for this is sensitive to the fact that propositions such as <$square circles are impossible$> are *necessarily* true. That is, it is good
if we have apodictic justification for such beliefs. For as long as our justification for believing that square circles are impossible is non-apodictic, we do not have justification for believing that necessarily, square circles are impossible. But imaginative experience does not seem fit to deliver such apodictic justification in the modal domain any more than emotional experience can deliver it in the moral domains, say. Even if imagining a flying pig justifies me in believing that flying pigs are possible, there is nothing in my having this imaginative experience to suggest that this is necessarily so – not any more than my experiencing indignation before a genocide suggests that genocide is necessarily wrong. In exercising our rational capacities and coming to see that what it takes to be square is incompatible with what it takes to be a circle, we come to see that square circles are impossible in a way that does not depend on contingent matters but on the contrary is due to the very essence of what it is to be square or to be a circle. In contrast, nothing about undergoing an experience – be it perceptual, affective, or imaginative – brings into play the irrelevance of contingent matters to the truth of what is believed on the basis of the experience. Thus experience is not a generator of apodictic justification.

If this is right, then when one has “imaginative justification” for some modal belief, there is still call for a different and deeper kind of justification, the kind provided by the exercise of rational capacities; but of course, once one has this “rational justification,” the imaginative justification is no longer needed. Here we see quite dramatically how imaginative justification for modal beliefs is epistemically preempted by rational justification.

I conclude that justificational pluralism is a poor strategy for securing an important role for the imagination in modal epistemology. If imaginative experience is as significant to our modal knowledge as perceptual and affective experience is to our mathematical and moral knowledge, then it is not all that significant after all: not only is it epistemically dispensable, it fails to provide the kind of apodictic justification modal beliefs call for.

4. Two Different Kinds of Belief?

Instead of justificational pluralism, one might try for a “modal-belief pluralism” according to which some modal beliefs may admit of justification purely by rational capacities, but others do not. In particular, since Kripke (1972) we are accustomed to distinguish between a priori modal truths, notably logical truths and conceptual or “analytic” truths, and a posteriori modal truths, such as “water is H₂O” and the like necessary identities pertaining to a “metaphysical” modality. Might imaginative experience be needed for the justification of metaphysical-modal beliefs, even though rational capacities suffice for the justification of logical- and conceptual-modal beliefs?
The idea here is that while rational capacities, in particular of reflecting on and analyzing our concepts, are clearly pertinent for beliefs about what is conceptually possible or impossible, when a more robust type of possibility and impossibility is involved, one that cannot be reached via reflection on concepts, a different epistemic tool would be needed. Suppose Sam fully masters the concepts of water and H₂O. Sam can reflect on and analyze her concepts all she wants; she would still have no justification for believing that water that’s not H₂O is impossible. For this impossibility simply does not fall out of what it takes to be water and what it takes to be H₂O – this is one way this impossibility (being metaphysical) is different from the impossibility of square circles (which is conceptual). Something else must thus be brought to the table if justification is to be obtained for the belief that water that’s not H₂O is impossible. Suppose, now, that Sam tries to imagine water that’s not H₂O, and (fully mastering these concepts as she does) finds herself unable to imagine such a thing. This failed imaginative exercise may reasonably be taken to generate at least prima facie justification for believing that water that’s not H₂O is impossible.

If this is right, then imaginative experience does not have an important role to play in modal epistemology – it’s just not a role in justifying any modal belief, but only some specific subset. Problem (of epistemic preemption) solved.

I don’t think that’s going to work either. For one thing, the status of “metaphysical” modality and its dependence or independence from the a priori modalities are controversial. On one approach, which we may call the “Australian view” even though it is anticipated already in Alan Sidelle’s (1989) early work, a posteriori necessary truths are artifacts of the coming-together of an a priori necessary truth and an a posteriori contingent truth. In the case of “water is H₂O,” for instance, the a priori necessary truth is something like “water is the actual occupant of the water role” and the a posteriori contingent truth is “the actual occupant of the water role is H₂O” (Jackson 1998). When we put these two together, we get “water is H₂O,” which inherits its epistemic status as a posteriori from “the actual occupant of the water role is H₂O” but its modal status as necessary from “water is the actual occupant of the water role.”

(What does “the actual occupant of the water role” mean? It’s a shorthand for an extremely complex rigidified definite description. To a first approximation, the recipe for producing the relevant description is as follows (for details see Kriegel 2017). First, collect all the descriptors we commonsensically take to apply to water: is clear when clean, quenches thirst when you drink it, fills the lakes and oceans, sometimes falls from the sky, is commonly used to do the laundry, is sold in bottles in supermarkets, etc. etc. Once you have collected all such descriptors, make every possible list of most of them. For example, if you have 1,000 descriptors, you might write down every list of at least 850 of them. From every such list, you can produce an extremely long conjunctive descriptor – with at least 850 conjuncts! When you do this for each possible list, you will get very many extremely long
conjunctive descriptors. Take all these and make a disjunction of them. This new disjunctive descriptor would apply to anything that satisfies at least one of the conjunctive descriptors – anything, that is, that satisfies at least 850 out of the 1,000 descriptors we commonsensically take to apply water. Now preface this obscenely long disjunctive descriptor with "the actual x such that," or the more patient "the x, such that in the actual world, . . ." This is what “the actual occupant of the water role” points toward. When we say that it is necessary a priori that water is the actual occupant of the water role, what we are saying is that it is a necessary truth, flowing from the very nature of the concept of water, that water is whatever in the actual world satisfies most of the descriptors that we commonsensically take to apply to water.)

Many details here do not matter for our purposes. The point for our purposes is that imaginative experience does not seem to play a role in the justification of either composite of "water is H₂O." On the one hand, exercise of rational capacities should suffice to establish that necessarily, water is the actual occupant of the water role: mastery of the concept of water should suffice to justify the belief that water is whatever in the actual world satisfies the long description condensed into “the water role.” In fact, it’s unclear how one could establish that necessarily, water is the actual occupant of the water role without the exercise of rational capacities. It’s unclear, in particular, how imagination could help establish this. (What are we supposed to try to imagine?) At the same time, the imagination is also and very obviously irrelevant to the justification of the contingent a posteriori belief that the actual occupant of the water role is H₂O – empirical inquiry is what justifies that. Thus the imagination appears to play no role in justifying either belief, and therefore no role in justifying the belief that necessarily, water is H₂O.

Because I am a fan of this “Australian view” of metaphysical modality, I don’t think the imagination is relevant to the justification of metaphysical-modal beliefs. But even if we don’t accept the Australian view, instead construing metaphysical modality as a genuinely sui generis modality, it’s unclear how this would allow imagination to play the epistemic role it otherwise couldn’t. On the sui generis view, the most natural epistemology of metaphysical modality is something like this: empirical inquiry produces justification for the (contingent) belief that water always and everywhere consists in H₂O, and we then perform some sort of abductive inference to the (modal) belief that necessarily, water is H₂O: the notion that water is essentially and therefore necessarily H₂O is taken to constitute the best explanation of the empirical fact that water is always and everywhere H₂O (Biggs 2011, Biggs and Wilson 2019).

I conclude that modal-belief pluralism, too, is a poor strategy for securing a role for the imagination in modal epistemology. If imagination has no role to play in the justification of logical-modal beliefs and conceptual-modal beliefs, it will not play a role in the justification of metaphysical-modal beliefs.
5. Modal Knowledge and Modal Understanding

We have been discussing the problem of epistemic preemption, a problem imaginative experience shares with affective experience in moral epistemology and intuitional experience in mathematical epistemology. In all these cases, it appears possible to form a justified belief, and ultimately to acquire knowledge, without ever undergoing any relevant experience, be it imaginative, affective, or intuitional. My idea in this section, however, is that we may be looking in the wrong place when we try to secure an epistemic role for imagination in the acquisition of modal knowledge; it is rather in the acquisition of modal understanding – a distinct epistemic good – that imaginative experience plays a crucial role.

I take my cue from the literature on moral understanding. Alison Hills (2009) considers the case of Mary and Eleanor: Mary believes that eating factory-farmed meat is wrong on the basis of close familiarity with factory-farming practices, animal psychology, and so on, whereas Eleanor believes that eating factory-farmed meat is wrong because Mary told her so (and she knows Mary is an expert on such matters). Both Mary and Eleanor have a justified moral belief here, claims Hills, but there is a clear epistemic asymmetry between them. According to Hills, the asymmetry concerns moral understanding: Mary understands why eating factory-farmed meat is wrong, whereas Eleanor does not quite understand this in the way Mary does.

Now, there are kinds of understanding that plausibly reduce ultimately to some sort of knowledge. It is plausible, for instance, that understanding why something happened is a matter of knowing what caused it to happen (Grimm 2014). To my mind, it is an open question whether understanding why eating factory-farmed meat is wrong amounts to some specific kind of knowledge. Hills herself considers that such understanding consists in a cluster of cognitive capacities: the ability to draw inferences, follow and give explanations, and so on. But it could be argued that understanding why eating factory-farmed meat is wrong amounts to knowing what makes it the case (perhaps equivalently: knowing what grounds the fact) that eating factory-farmed meat is wrong.

Importantly, however, there are also kinds of understanding that are very plausibly irreducible to knowledge, and instead implicate experience centrally. David Bourget (2017) considers the case of being taught at school that the sun is approximately 1,300,000 times bigger than the earth. On the basis of the teacher’s testimony, we come to believe this, and our belief is both true and justified (because the teacher is a reliable source of information on such matters, let’s say). For all that, though, we have no genuine understanding of what it really means that the sun is 1.3 million times bigger than the earth. The magnitudes involved are too large for us to really grasp and so to speak “dominate in thought.” But
when the teacher then shows us a basketball next to an apple seed, and tells us that that is the size difference between the sun and the earth, something happens with us that seems to be epistemically significant. We enter a new epistemic relation to the proposition <the sun is approximately 1,300,000 times bigger than the earth>. Even though we already knew that this is so, our overall epistemic position seems to have improved; what happened to us can be rightly described as an epistemic achievement. But it is a peculiar achievement: we have not acquired any further evidence for the proposition that the sun is approximately 1.3 million times bigger than the earth, or learned of any important consequence. Rather, we have gained a measure of insight into what it means for the sun to be 1.3 million times bigger than the earth – we now understand what it means for the sun to be that much bigger than the earth (more than we understood it before, at any rate). As Bourget puts it, we grasp the fact in a way we did not before being shown the basketball and apple seed. What Bourget argues – quite plausibly – is that this grasp is constituted by a specific conscious experience. It is not the visual experience of the basketball and apple seed side by side, but a second experience brought on by this visual experience. This second experience we may simply call the grasping experience. After undergoing this experience, we more fully understand what previously we only knew.

Call the kind of understanding involved in such cases understanding-as-grasping. Imagine now Eleanor visiting a modern factory farm, touring the various cramped cages, hearing heart-rending squeals all about, and so on, and soon experiencing a kind of moral startle with various affective dimensions (sorrow, anger, etc.). Then and there Eleanor comes to understand what Mary was talking about. She now grasps what previously she only knew: how wrong eating factory-farmed meat is. Here affective experience is given a role in moral epistemology quite distinct from that of justifying moral beliefs. Instead, its role is to constitute the kind of “affective grasp” experience that provides the subject with moral understanding (see Wigglesworth ms).

Similar grasping experiences occur in the mathematical domain. Elijah Chudnoff (2015: 98) asks us to consider whether it is true that if a < 1, then 2−2a > 0. If you are anything like me, you must first do some work in your head, and then suddenly you “get it”: the coin drops and you can just see (so to speak!) both what “if a < 1, then 2−2a > 0” really means and why it’s true. That coin-dropping moment is the moment of “intuitional experience” in which we come to grasp that if a < 1, then 2−2a > 0. Even if we already believed this, say on the basis of a reliable teacher’s testimony, or on the basis of remembering having worked out a proof last year, in undergoing the grasp experience our overall epistemic position is enhanced. We now understand what previously we only knew.

What I want to propose is that imaginative experience plays the same role in modal epistemology that the above examples suggest affective and intuitional experience play in moral and mathematical epistemology. By reflecting on what it takes to qualify as a pig,
what it takes to count as flying, and what it takes to be possible, we can work out that a flying pig is possible. But if we then conjure a mental image of a pig flying across the sky, we experience a direct grasp of the relevant possibility, and come to understand what previously we only knew. My proposal is that this is what imagination gives us, epistemically speaking, that exercise of rational capacities does not.

Some people suffer from congenital aphantasia: they cannot, and never could, form mental images (Zeman et al. 2015). A patient suffering from congenital aphantasia can certainly form the justified belief in the possibility of a flying pig. But there is a sense in which such a person lacks any insight into the nature of this possibility. If, after brain surgery, they suddenly acquire the power of imagery, and then imagine a flying pig, they might exclaim “ah, so that’s what it means for a flying pig to be possible!” The experience would be similar to that of a subject like Jackson’s Mary, who has acquired (essentially: by testimony) many justified beliefs about red objects, but who, upon being let out of her room and seeing a red rose, exclaims “ah, so that’s what it means for a rose to be red!” It is also similar to Eleanor’s experience upon visiting a factory farm and exclaiming “ah, so that’s what Mary as talking about!” In all these cases, a person comes to experience direct grasp, and to that extent to more fully understand, something previously they already knew, though without fully grasping what it is they know.

Chudnoff’s case is phenomenologically compelling because there is an effort involved, which implies a certain time delay before the onset of the grasping experience; this “before and after” contrast is a feature of the Eleanor case as well, with the visit to the factory farm serving as the before vs. after turning point. In the case of imagining a flying pig, we don’t have this contrastive before-vs.-after effect, because it’s too easy to imagine a flying pig, and so we manage it instantaneously. But other cases may involve this before-vs.-after effect. When I teach Descartes’ substance dualism to my undergraduates, the idea that embodiment is an accidental feature of ours, and that in principle we could exist without our bodies, is typically met with initial discomfort: they are not sure they have a handle on what the idea is. I then tell them the following story.

Imagine you are asked to come to a government building, where scientists tell you that you were randomly selected to test groundbreaking military technology. You are placed in a room where you look at yourself in a full-length mirror. Suddenly your arms disappear. It feels very strange from the inside, to not feel your arms, and a bit creepy to see yourself without arms in the mirror. But fortunately it doesn’t hurt. Then suddenly your legs disappear, and you feel yourself a lot lighter, and also see yourself in the mirror a floating torso-and-head. You are naturally starting to be freaked out, but a scientist comes into the room and assures you that you’ll get your entire body later, so there’s no need to worry. As you calm down, your torso disappears next and all you see in the mirror, and feel from the inside, is just your
head floating. Now the head starts to disappear very slowly, as though meticulously erased from the fringes inward. Eventually you’re just two eyes looking out at the mirror and its surroundings. And then the two eyes pop off and you see an empty mirror. You find that you can float freely around the room, feeling weightless. You can still see and hear and smell things around you. You just don’t have any feeling of the inside of a body: no itchiness, no mild headache, no hunger – nothing of the sort. That scientist comes back in and tells you they want to keep you in for observation for another couple of hours, then they’ll give you the choice of getting your body back or continue your existence disembodied for another few days, or even weeks – it’s entirely up to you. After a few weeks, though, they have to give you your body back: any part of it or the whole thing.

Once told this story, my undergraduates feel they have a firmer grip what on what Descartes has in mind with his substance dualism. They can “see” what it would be to exist unembodied. They experience grasping the possibility of disembodied personal existence, and consequently, come to understand (this aspect of) Cartesian dualism.

To understand Cartesian dualism is not yet to agree with it, of course. More deeply, the notion of understanding-as-grasping, unlike some other notions of understanding, is not a factive notion: one can undergo an experience of grasping p even if it is not the case that p. In this understanding-as-grasping is different, for instance, from understanding-why. As Hills (2009: 99) notes, “you cannot understand why p if p is false.” Thus, when one asserts that Mary understands why eating factory-farmed meat is wrong, one commits oneself to it really being wrong. But understanding-as-grasping is not unique in not being factive. Understanding a subject matter (“I understand organic chemistry”), for instance, as well as understanding specific theories or approaches within subject matters (“I understand Newtonian mechanics”), are certainly not factive: one can be correctly said to understand Newtonian mechanics even though Newtonian mechanics is false.

What exactly is it that you understand when you imagine a flying pig? We should not answer: you understand that a flying pig is possible. For the kind of understanding we are interested in here is not propositional understanding – it is a kind of understanding constituted by grasping, and grasping is an objectual attitude. Interestingly, however, the object of this objectual attitude seems to be a proposition. And so we might answer: when you imagine a flying pig, you come to understand the proposition that a flying pig is possible – where understanding the proposition that p is not the same as understanding that p. Understanding that p is a matter of understanding that p is the case; understanding the proposition p is understanding what p amounts to. That’s not the same thing. When we imagine a flying pig, we come to understand what the possibility of a flying pig amounts to; we do not come to understand that it is a possibility. That we already understood when we analyzed the concepts of pig, flight, and possibility. (Another option we have, if we find no
satisfactory answer to the question “what exactly is it that you understand?,” is to drop the notion of understanding and frame the proposal directly in terms of grasping as a final epistemic good irreducible to knowledge.)

My proposal, then, is that although exercise of rational capacities is sufficient for the justification of modal beliefs – and therefore, ultimately, for modal knowledge – imaginative experience is indispensable for modal understanding, in the sense that it enables direct grasp of possibility that rational capacities do not. In this respect, then, rational capacities do not threaten to epistemically preempt imaginative experience.

Richard Feynman famously said that nobody understands quantum mechanics. What did he mean by this? Many people understand how the theory works, why it is so plausible, and so on. I think what Feynman was saying is that nobody is able to imagine – form a concrete image of – the possible world portrayed by quantum mechanics. The capacity to imagine a possible situation enables direct grasp of the relevant possibility, something that analysis of concepts, unaccompanied by any exercise of imagination, cannot do.

6. The Epistemic Value of Modal Understanding

The strategies we have considered in Sections 3-4 relied each on a specific pluralism: pluralism about modal justification in one case, pluralism about the modal beliefs up for justification in the other. The strategy I am recommending here relies instead on a certain pluralism about epistemic value.

To appreciate this kind of pluralism, consider what we might call knowledge monism about epistemic value. This would be the view that there is only one final epistemic good: knowledge. Knowledge, on this view, is the only thing that is epistemically good for its own sake. Anything else that might be epistemically good is such only instrumentally, that is, insofar as it is conducive to the achievement of knowledge. For instance, it is epistemically good to have true beliefs, on this view, because having a true belief is an important step on the way to having knowledge. Other versions of monism about epistemic value would designate other individual epistemic goods as the source of all epistemic value. One particularly widely discussed version of monism, veritism, holds that it’s actually true belief that is the one final epistemic good. Epistemic justification is valuable, according to veritists, only instrumentally (Goldman 1999). There are, of course, other versions of monism one could float.

Pluralism about epistemic value, in contrast, posits a plurality of mutually irreducible final epistemic goods. According to Chris Ranalli (2021), for instance, true belief is one final
epistemic good, but another, distinct and irreducible final epistemic good is cognitive contact with reality. Ranalli’s argument is simple. We seem to have the stubborn intuition that knowing that \( p \) on the basis of perception is somehow better, epistemically speaking, than knowing it on the basis of testimony. Suppose that when it comes to oak trees, you are just as reliable as my sense perception: forming beliefs about where there are oak trees on the basis of your testimony would lead to just as many true beliefs as forming such beliefs on the basis of “the testimony of my eyes.” Intuitively, there is something specially valuable, from an epistemic point of view, about “seeing for myself” the oak tree outside my window, as opposed to believing it, “blindingly” so to speak, purely on the strength of your say-so. Building on work by Mark Johnston (1996), Ranalli argues that perception’s added epistemic value as compared to testimony is not (just) a matter of likely truth and informativeness – the sort of considerations veritists might appeal to – but pertains (also) to the fact that perception, unlike testimony, provides us with cognitive contact with reality, something testimony does not do.

My recommendation for the proponent of the epistemic significance of imagination in modal epistemology is to argue that, whatever other final epistemic goods we recognize, we should also recognize understanding (and in particular, understanding-as-grasping) as a distinct final epistemic good, one whose epistemic value is irreducible to that of knowledge (cf. Zagzebski 2001). Indeed, it might be suggested that imagination provides direct grasp of modal truth analogously to the way perception provides direct grasp of empirical truths, and just as the latter is a final epistemic good distinct from empirical knowledge, the former is a final epistemic good distinct from modal knowledge.

Making the argument for this would not be simple. It is not enough, for instance, to point out that of two epistemic agents who know that \( p \), the one who also grasps \( p \) is epistemically better off than the one who doesn’t. For it may be that what makes the grasping agent better off is their capacity to draw inferences that would lead to further knowledge, or to acquire second-order knowledge about interrelations between the knowledge that \( p \) and other bits of knowledge, or some other knowledge-based good. In other words, the added epistemic value contributed by grasping as such might be merely instrumental, a value it has in virtue of leading to more knowledge. To make the argument that grasping has final epistemic value, we must show that even in scenarios where, for whatever reason, no downstream epistemic benefits can be envisaged, the intuition remains that the agent who also grasps is epistemically better off than the one who merely knows. I think this is ultimately quite plausible, but it would have to be shown.

There is much exciting work still to be done, then, on direct grasp of possibility, modal understanding, and epistemic value. But prospects appear promising for an argument along the following lines in support of the epistemic significance of imagination in modal epistemology:
1) Imaginative experience is necessary for modal understanding-as-grasping;
2) Understanding-as-grasping is a distinct and irreducible final epistemic good; therefore,
3) There is a distinct and irreducible final epistemic good for which imaginative experience is necessary.

Call this the argument from modal grasp. It constitutes a strategy for securing a prominent role for the imagination in modal epistemology that cannot be preempted by exercise of rational capacities, though it is consistent with the fact that rational capacities appear to render the imagination dispensable when it comes to the acquisition of modal knowledge. I have argued that this is the best strategy for securing a central epistemic role for the imagination.²

References

- Quine, W.V.O. 1951. 'Two Dogmas of Empiricism.' *Philosophical Review* 60: 20–43.
- Wigglesworth, L. Ms. 'How We Really Grasp Moral Truths.'

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1 The notion of *conceiving* (as well as its cognate *conceivability*) lies intriguingly in-between the two. On the one hand, intuitively it seems that my conceiving of purple grass may be *constituted by* my imagining purple grass (or perhaps my imagining *that* grass is purple). On the other hand, the word “conceiving” makes us think of a mental activity concerned with the manipulation of *concepts* – which harkens back to some of rational capacities just discussed. For this reason, I will bracket conceiving in what follows, even though it has been a central notion in discussions of modal epistemology.

2 For comments on a previous draft, I am grateful to Juan Comesaña and Anna Giustina.