

Intellectual Virtues and the Epistemology of Modality:
Tracking the Relevance of Intellectual Character
Traits in Modal Epistemology

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INTELLECTUAL VIRTUES AND THE EPISTEMOLOGY OF MODALITY: TRACKING THE RELEVANCE OF INTELLECTUAL CHARACTER TRAITS IN MODAL EPISTEMOLOGY

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Abstract

The domain of modal epistemology tackles questions regarding the sources of our knowledge of modalities (i.e., possibility and necessity), and what justifies our beliefs about modalities. Virtue epistemology, on the other hand, aims at explaining epistemological concepts like knowledge and justification in terms of properties of the epistemic subject, i.e., cognitive capacities and character traits. While there is extensive literature on both domains, almost all attempts to analyze modal knowledge elude the importance of the agent's intellectual character traits in justifying beliefs about what is possible or necessary. My aim in this paper is to argue that intellectual traits of character, like thoroughness, autonomy, epistemic courage and open-mindedness, are relevant to modal epistemology.

Keywords: modal epistemology, epistemology of modality, virtue epistemology, responsibilism, character traits

1. Introduction

The domain of modal epistemology tackles questions regarding the sources of our knowledge of modalities (e.g., possibility and necessity²), and what justifies beliefs about modalities. We know that our laptops could have had a different color, but what is the source of this piece of knowledge? If we believe that philosophical zombies are

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² This paper will be concerned with metaphysical modalities. Wherever unspecified, I refer to metaphysical possibility and necessity.

metaphysically possible, or, if we believe that they are not, what could serve as justification?

Virtue epistemology, on the other hand, aims at explaining epistemological concepts like knowledge and justification in terms of properties of the epistemic subject, i.e., intellectual capacities and character traits (Battaly 2018, 1; Turri *et al.* 2021). While there is extensive literature on both domains, almost all attempts to analyze modal knowledge (see, *inter alia*, Chalmers 2002; Geirsson 2005, 2014; Gregory 2004, 2010; Hawke 2011; Kung 2010, 2016; Yablo 1993) elude the importance of the agent's intellectual traits of character in explaining modal knowledge and justifying beliefs about what is possible or necessary³.

The aim of this paper is to argue that intellectual traits of character, like thoroughness, attentiveness, epistemic autonomy, courage and open-mindedness, are relevant for modal epistemology. The following two sections will be devoted to short descriptions of the fields of virtue epistemology and modal epistemology. Regarding the former, I will highlight the classic distinction between reliabilist virtues (i.e., truth-conducive faculties or capacities) and responsibilist virtues (i.e., traits of character). Regarding the latter, I will highlight the central role of imagination in justifying beliefs about what is metaphysically possible. In the fourth section I will track the relevance of exercising intellectual traits of character in the practice of justifying beliefs about possibilities. As I will show in the first three subsections of section 4, employing the faculties or capacities involved in imagining is, in some cases, insufficient to gather justification, unless we exercise various responsibilist intellectual virtues, like thoroughness, patience, diligence, care, perseverance, creativity, commitment to find the truth, sensitivity to detail etc. In the fourth subsection I will point, guided by the intuitions of Van Inwagen (1998) and Geirsson (2014), to the social nature of our practice of acquiring modal justification. I will argue that, in some cases, only by showing epistemic autonomy, open-mindedness and courage, we can mitigate the effect of various perceived social, reputational or professional harms, and counter negative social

³ One notable exception is Menzies' (1998) account of metaphysical modalities in terms of response-dependent concepts.

influences on our epistemic activities (i.e., forming, sustaining or rejecting modal beliefs).

2. Virtue epistemologies: the reliabilist and responsibilist varieties

Virtue epistemologists explain and define normative epistemic notions like knowledge and justification in terms of the agent's traits, i.e., faculties, capacities, abilities, or traits of character (Battaly 2018, 1; Turri *et al.* 2021). In a nutshell, the main idea is that an epistemic agent S knows that P if and only if S believes that P as a result of exercising a cognitive or intellectual virtue V, and P is true. Epistemologists have distinguished two varieties of virtue epistemology based on what they took to be an intellectual virtue: *reliabilist* and *responsibilist* virtue epistemology. I will discuss these two in the following paragraphs.

According to reliabilist virtue epistemology, intellectual virtues are those faculties of an epistemic subject that are reliable in forming or sustaining true beliefs (Baehr 2006; Goldman 1993; Greco 2000, 2003; Sosa 1980, 1991). What makes a faculty an intellectual virtue is its truth-conduciveness or success in attaining true beliefs (Greco 2000; Sosa 1991, 138). Typical faculty virtues acknowledged by reliabilists are perception, memory, introspection and logical reasoning (Goldman 1993, 278; Baehr 2006, 193). A common tenet in the virtue epistemology literature is that the reliability of any virtue is relative to (Baehr 2006, 208; Greco 2003, 130; Sosa 1991, 138):

- (a) certain circumstances, or environments, and
- (b) certain kinds of propositions⁴.

As an example, our visual faculty is reliable with regard to propositions *about* visual properties of objects (Baehr 2006, 208; Sosa

⁴ In the words of Ernest Sosa (1991): "Let us define an intellectual virtue or faculty as a competence in virtue in which one would mostly attain the truth and avoid error in a certain field of propositions F, when in certain conditions C. Subject S believes proposition P at time t out of intellectual virtue only if there is a field of propositions F, and there are conditions C, such that: (a) P is in F; (b) S is in C with respect to P; and (c) S would most likely be right if S believed a proposition X in field F when in conditions C with respect to X." (138)

1991, 138), and only in circumstances that are *suitable* for the correct evaluation of visual properties. Clearly, our visual system cannot be trusted to be accurate or truth-conducive when applying it to find truths about sounds, smells, abstract objects etc., when applying it in improper or unfavorable circumstances, e.g., while wearing the wrong glasses, in the dark, under sodium lighting (Pettit 1999)⁵, or in an environment where, like the one described in the Fake Barns Case (Goldman 1976), only by luck one comes to form a true belief (Greco 2003, 129-130).

However, although exercising one's faculties is useful when intending to acquire knowledge about one's immediate surroundings, it is not sufficient to acquire what Baehr (2006, 208) calls "higher grade knowledge", i.e., knowledge about subject matters that are abstract, conceptually and theoretically laden.

As anticipated above, not all virtue epistemologists are reliabilists. Let's see some scenarios that ought to persuade that exercising faculty virtues is not sufficient for knowledge acquisition:

(Needle in the haystack) As a result of losing a bet, you are tasked to find whether there is a needle in a haystack. Your eyes are fine, you see each straw of hay that comes before your eyes, but it is a tiresome task and you get bored with it rather fast. After an hour of looking, as a result of boredom and losing your focus, you miss the needle, in spite of looking right in its direction. Consequently, you form the belief that there is no needle in the haystack.

Regarding the above case, the failure of not finding the needle is due to insufficient perseverance, patience, attentiveness or thoroughness, but not a lack of good eyesight. Given that we are not in a proper circumstance for using the faculty of vision, finding the needle would only be due to the exercise of the aforementioned virtues.

In the following case, according to Baehr (2006, 200), what best explains the historian's reaching the truth is not her visual acuity, logical reasoning or memory, but rather her thoroughness, fair-mindedness, impartiality, commitment to find the truth and open-mindedness:

⁵ According to Pettit (1999), the list of unfavorable conditions is permanently open to revision and potentially infinite.

“A historian has garnered international recognition and praise for a book in which she defends a certain view of how the religious faith of one of America’s ‘founding fathers’ influenced his politics. While researching her next book, she runs across some previously unexamined personal letters of this figure which blatantly contradict her own account of his theology and its effects on his political thought and behaviour. She does not ignore or suppress the letters, but rather examines them fairly and thoroughly. Because she is more interested in believing and writing what is true than she is in receiving the praise of her colleagues and readers, she repudiates her influential account, both privately and in print.” (Baehr 2006, 200)

What these two cases show is that the use of our faculties may not be sufficient for knowledge and justification acquisition. As shown, in order to gain knowledge, it is necessary for the epistemic agent to exercise perseverance, patience, attentiveness, thoroughness, fair-mindedness, and impartiality. Note that these traits are not faculties (like vision, memory, reasoning etc.), but intellectual character traits of an epistemic agent. Faculties and intellectual character traits were carefully distinguished by epistemologists: as opposed to faculties, character traits are acquired, and exercising them involves an effort on part of the epistemic subject, whose agency is also implied (Baehr 2006, 197; Grasswick 2018, 196). Moreover, lacking any of these traits is blameworthy, while lacking a faculty is not (Zagzebski 1996, 104)⁶. To conclude this section, responsibilist virtue epistemologists argue that traits of intellectual character ought to count as intellectual virtues, while reliabilists take the set of virtues to be limited to truth-conducive faculties.

3. Modal epistemology and the role of imagination in justifying modal beliefs

Let us consider the following two propositions:

- (1) This paper could have had a different word count.

⁶ According to Zagzebski (1996), intellectual virtues are character traits with the following properties: they are acquired, reliable, deep and enduring cognitive excellences, they involve a motivational component, and they define one’s identity.

(2) Philosophical zombies are metaphysically possible entities.

Certainly, we know that (1), as we know many other things about what is possible: for example, we could have taken a longer stroll in the park, that we could have started different careers, and so on. Modal epistemologists are interested in finding out the source of all this wealth of knowledge about modalities that we possess. Regarding (2), there is an intense philosophical debate regarding its truth value. Even so, what would justify a belief that (2) is true?

How do we explain our knowledge of modalities and how do we justify our beliefs about what is possible? Part of the tradition in modal epistemology is to adhere to (and improve upon) an epistemic variant of Hume's Principle, i.e., that anything imaginable is possible:

(Hume's Epistemic Principle) If S can imagine that P, then S is justified to believe that P is possible.

In this tradition, many contemporary modal epistemologists (see, *inter alia*, Geirsson 2005, 2014; Kung 2010, 2016; Gregory 2004, 2010; Yablo 1993) consider that imagination⁷ plays a central role in justifying modal beliefs and as a source of modal knowledge. In the following, I will succinctly explain the link between imagination and justification for modal beliefs, and what an act of imagining might consist in.

Following Geirsson (2005, 2014), imagination is a defeasible guide to possibility, and justification comes in degrees⁸. Typically, in order to acquire justification for a belief that P is possible, we have to imagine a scenario in which P is true. By filling the scenario with more detail, we can either strengthen our justification, or encounter a defeater that renders our belief unjustified. Say that we want to gather evidence that Hesperus could have been brighter than Phosphorus. We would have to imagine a scenario in which the two are distinct entities, and the first is brighter than the latter. According to Geirsson (2005, 295-7), before

⁷ I will use the terms "imaginability" and "imagination" in their widest meaning, and not distinguish between imaginability and conceivability, or between acts of imagining and acts of conceiving. Consequently, I will treat "imaginability" and "conceivability" as interchangeable.

⁸ Hawke (2011, 359) also adheres to the idea that our justification for modal statements comes in degrees.

discovering that they are a single entity, the belief would have been justified by the imagining. However, this discovery acts as a defeater, since filling the imagined scenario with this detail makes it inconsistent with the initial supposition of distinctness (Geirsson 2005, 297).

Let us see now what imagining consists in. According to Kung (2010, 2016) and Gregory (2004, 2010), all acts of imagining involve two kinds of content: basic qualitative content⁹ and assigned, or stipulative, content. Typical basic qualitative content includes perceptual or sensorial properties, while assigned or stipulative content includes background knowledge, suppositions (see Kung 2016, 108; Gregory 2010, 328) and theoretical properties like “exists” and “is identical with” (Kung 2010, 643). This distinction between kinds of content is crucial in explaining our ability to imagine various statements and scenarios that do not involve any sensorial properties. Clearly, seeing a red apple, we can imagine that it could have been green: we just have to picture it in our minds with a different color. Likewise, we can imagine that apples could have smelled like oranges do. But what about imagining that there are 5-dimensional conscious beings, that there is an even number greater than 2 that is not the sum of two primes, or that there are more than six types of quarks? Intuitively, we can imagine all these, even though there is nothing sensorial we can conjure up in our minds, and the explanation of the fact that they are imaginable involves our ability to assign content, i.e., to make stipulations and suppositions.

But is any kind of imagining that P sufficient for justifying a belief that P is possible? Kung further distinguishes between *probative* and *non-probative acts* of imagining. If an act of imagining is probative for a possibility statement P, then it justifies believing that P. In order for an imagining act to be probative, P must not be derived solely from the assignments or stipulations involved in the imagining. The intuition, also shared by Hawke (2011) and Gregory (2004, 2010), is that deriving P

⁹ These are the terms used by Kung in (2010) and (2016). Following the same intuition, Gregory distinguishes between “qualitative representations of visual phenomena” and suppositions in (2004, 329), and between “sensory imaginings” and “nonimagistic imagining” in (2010, 328). Nonimagistic imagining involves suppositions and labellings (2010, 330). For a discussion and comparison between Kung’s and Gregory’s theories of imagination, see Lam (2018).

from imagining-by-stipulating that P would be circular, as in the case of believing that P solely from supposing that P holds.

Recall that reliabilist epistemologists consider reasoning and memory to be faculty virtues. At this point, it is important to note that justifying modal beliefs by imagining acts involves at least two faculties or cognitive capacities: reasoning and memory. The faculty of reasoning is largely exercised when checking the assigned content for contradiction: if one can derive a contradiction from the stipulations or suppositions, then, clearly, what one has imagined is not evidential for a possibility. And, obviously, the epistemic subject needs to have a good working memory to ensure that the possibility of P is not derived from a set of stipulations including P. In the following, I will track the necessity of exercising responsibilist virtues in our acts of justifying beliefs about what is possible. As a result, I will show that, alongside faculties like reasoning and memory, traits of intellectual character play an important role in modal epistemology.

4. Tracking the relevance of character traits in modal epistemology

The main lines of my argumentation are the following:

(1) As shown in the previous section, imagining plays a central role in justifying modal beliefs, and the set of faculties used to imagine that P includes reasoning and memory. I will argue that an exercise of reasoning and memory is, in some cases, insufficient for justifying modal claims. Furthermore, I will point that only when exercising some character traits alongside the faculties of reasoning and memory we can gather justification for modal beliefs. Consequently, I will present the following: (a) the argument from the case of reasoning, (b) the argument from the case of memory, and (c) the argument from the case of filling scenarios.

(2) The second line of argumentation stems from the idea that our epistemic activities of forming, sustaining, and rejecting modal beliefs are subject to social influences. Van Inwagen (1998) and Geirsson (2014) argue that we may face peer pressure or various kinds of threats to

accept certain modal beliefs for which there is no clear evidence. I will point that by exercising certain traits of intellectual character like autonomy, open-mindedness and courage we can mitigate these influences on our epistemic activities, and increase the chances of adopting only those modal beliefs that are justified. Consequently, I will present (d) the argument from the social nature of modal justification.

4.1. The argument from the case of reasoning

Since gathering justification by an act of imagining involves making deductions from assigned and qualitative content, our reasoning faculty is involved in justifying our beliefs about what is possible. Say that we need to decide the possibility of Russell's barber who shaves all and only those who do not shave themselves. Visual imagination is not useful in this case, as it can mislead us into thinking that a barber as such is possible. Only working through the logical form and implications of the stipulations (that there is a barber, and that this barber satisfies the property of shaving all and only those who do not shave themselves) will result in deriving a contradiction. Note that there are few stipulations and variables¹⁰ in the description of this scenario. Clearly, the difficulty of checking for inconsistency increases with the number of stipulations and variables: consider trying to decide whether it is possible to cross only once Euler's Seven Bridges of Königsberg, whether it is possible to construct a 19-sided regular polygon with ruler and compass¹¹ or whether a cartographer can color any map with at most four colors in such a way that no neighboring countries share the same color.¹² Finding the contradiction underlying the first two cases required extensive mathematical knowledge and practice, and proving that that latter is possible was achieved only with the help of a computer proof.

¹⁰ A first-order logical representation involves only two variables, see (Cusmariu 1979, 365).

¹¹ See (Lewis 1986, 90) for a discussion of this example.

¹² This statement corresponds to the Four-Color Problem. See (Tymoczko 1979) for a discussion of the theorem.

To conclude, I gather that simply possessing and exercising our reasoning faculty would be insufficient when evaluating complex scenarios involving many stipulations and variables. In this case, it is necessary to exercise the character traits needed for providing logical and mathematical proofs. Such character traits include thoroughness, perseverance, creativity and diligence, as Tanswell and Kidd (2021, 413) proposed for the case of mathematics. Since checking the internal consistency of the assigned content is similar to working out mathematical proofs, and since the activity of proving requires various character traits, I gather that an imaginer, set to identify whether a modal belief is justified or not, ought to exercise the same set of responsibility virtues.

4.2. The argument from the case of memory

Recall that Hawke (2011), Kung (2010, 2016) and Gregory (2004, 2010) point out that our acts of imagining involve stipulations, and deriving that P only from stipulations does not offer justification for believing the possibility of P . On the contrary, we would just base our belief on a circular argument. Now let us consider the following case:

S tries to gather justification for the modal belief that P and she stipulates in an imagining act that Q_1, \dots, Q_N , where some Q_i is P and N is a large number. Since S has stipulated that P , the imagining act does not offer evidence for believing that P is possible. However, since N is a large number, S forgets that she stipulated that P , and she erroneously takes Q_1, \dots, Q_N to support the possibility of P .

In the above case, the method of justifying beliefs about what is possible is taken to an extreme, since the number of stipulations is very large. The chances that the imaginer erroneously derives a conclusion that P from a set of suppositions that includes P increase with the cardinality of the set of stipulations. Intuitively, if the number of stipulations is large, the chances that one would forget that the derived conclusion is part of the assigned content are high. Nevertheless, I gather that patience, attentiveness, carefulness and a commitment to find the truth decrease these chances. An imaginer committed to finding the truth and knowing the undertaken risks would be doubtful that their

first attempt was valid, and will repeat the experiment with more attention and care to detail, or check it with their peers. Consequently, I gather that character traits like patience, attentiveness, carefulness, commitment to find the truth are required to mitigate the risks of using the faculty of memory in improper circumstances. In the above case, should S have exercised these traits of character, it is more likely that she would not have taken the imagining act to justify that P is possible.

4.3. The argument from the case of filling scenarios

Recall that, for Geirsson, an epistemic subject S is justified to believe that P is possible in case S has imagined a scenario in which P is true, and the justification for modal belief P comes in degrees. The degree in which S is justified to believe that P is possible varies with the degree of detail put in the scenario:

“First, justification comes in degrees, i.e., one can be more or less justified in believing P. This fits nicely with the fact that scenarios can be more or less determinate and can vary in how complete they are. As a general rule, the more determinate the relevant scenario I imagine and the more complete it is, the higher degree of justification it confers on my belief that it is possible that P. Second, the justification is defeasible by additional evidence.” (Geirsson 2005, 296).

To justify a modal belief we need to fill the scenario with all the relevant information, scientific laws and facts included (Geirsson 2005, 295). A consequence of completing a scenario might be encountering a defeater, i.e., a proposition that once added to the scenario makes it inconsistent. As such, the result would cancel the justificatory effect of the scenario, and, consequently, losing the justification for the modal belief (Geirsson 2005, 296). Let us take some examples: the proposition that no speed can be higher than the speed of light makes inconsistent the scenario in which a spaceship travels the Universe at warp 3, the fact that Sir Andrew Wiles proved Fermat’s Last Theorem is inconsistent with a scenario in which one bright Oxford mathematician proves that Fermat was wrong, the fact that water is composed of hydrogen and oxygen makes a scenario in which alchemists discover hydrogen-less water inconsistent. Additionally, the imaginer needs to reason using the

laws of logic (propositional, first-order, modal etc.) and have a good knowledge of semantics (Geirsson 2005, 282). For example, not taking into consideration that proper names are rigid designators might lead one into believing that although Hesperus is actually Phosphorus, it is possible to construct a scenario in which they are distinct (Geirsson 2005, 297).

Given the above, I gather that good reasoning, memory, and strong sensorial imagination are not sufficient for acquiring strong justification for modal beliefs. It seems easy to start believing that spaceships could travel with speeds greater than the speed of light, as we can easily picture Star Trek's Enterprise voyaging through the Universe. Or out of wishfully thinking that the scenario can be consistently completed¹³. A thorough and committed imaginer will add the relevant physical laws in the scenario and thus avoid jumping to wrong modal conclusions. All in all, I gather that Zagzebski's (1996,114) list of intellectual virtues, including "the ability to recognize the salient facts; sensitivity to detail", "intellectual perseverance, diligence, care and thoroughness," is relevant to modal justification. The exercise of these character traits is necessary for increasing modal justification by filling scenarios, and for identifying defeaters.

4.4. The argument from the social nature of modal knowledge and justification

Drawing on an analogy between perceiving and imagining, Van Inwagen (1998) argues that just as our knowledge of mundane perceptual matters is accurate (we are rather accurate when evaluating the distance between our eyes and our laptop screens), so is our knowledge of mundane modal matters, e.g., that our laptops could have had a different color and so on. Now, just as perception is not accurate when evaluating very large distances, so is our ability to form true modal beliefs when the subject matter consists of non-mundane matters, e.g., we are not in the position to accurately judge whether zombies, disembodied minds, purple cows, transparent iron are possible. What

¹³ Wishful thinking is taken by Zagzebski (1996, 152) to be an intellectual vice.

do philosophers who believe in such possibilities owe their credence to? Here, Van Inwagen (1998, 73) distinguishes:

“[those] modal judgments [that] are products of [their] ordinary human powers of “modalization” from those that are based on [their] immersion in a certain philosophical environment – an environment composed of philosophers who unthinkingly make all sorts of fanciful modal judgments because *they’ve* always been surrounded by philosophers who unthinkingly make the same sorts of fanciful modal judgments.” (Van Inwagen 1998, 73)

The idea is that two sources of modal beliefs are distinguishable - a natural power that we all possess and that we owe our knowledge of basic possibilities, and “immersion in a certain philosophical environment” or “professional socialization” that, according to Van Inwagen, influences the set of beliefs about non-basic possibilities:

“[Mundane or basic modal beliefs] have their source in our ordinary human powers of “modalization” ... [non-mundane or non-basic modal beliefs] have their source in his professional socialization, in “what his peers will let him get away with saying.” (Van Inwagen 1998, 73)

According to Hawke, Van Inwagen “sets out to expose a philosophical culture that he sees as having grown accustomed to accepting far-out possibility claims on the basis of mere intuition” (2011, 352). Although I agree with Hawke, there is much more to draw from Van Inwagen’s claim: he also deplores an epistemically dangerous and faulty way to form, sustain and justify beliefs about what is possible solely on the ground that they are shared by a number of peers. From a virtue-theoretic point of view, what is deplorable about such a “philosophical culture” is:

(1) The presence of certain epistemic vices like intellectual conformism (manifested in non-self-reliance) and closed-mindedness, and

(2) The absence of certain epistemic virtues like intellectual autonomy (to be manifested in self-reliance) and open-mindedness.

In the following, I will discuss these intellectual vices and virtues, and show their relevance for modal epistemology.

As mentioned above, one of the pitfalls that Van Inwagen warns about is the vice of intellectual conformism. Intellectual conformists are not interested in forming true beliefs, but merely in conforming their set of beliefs to that of other epistemic agents, or groups. Fairweather describes a case of conformism in his (2001):

“Let us consider the case of Conrad, the Doxastic Conformist. Conrad’s primary cognitive goal is that a class of his beliefs largely overlap with the beliefs of Mr. Cool. If Mr. Cool believes *P*, then Conrad will believe *P*. Conrad forms beliefs in this way not because he thinks Mr. Cool is a reliable guide to the truth, but because Mr. Cool is cool and Conrad wants to be cool. Conrad has become so obsessed with bringing his belief system into conformity with Mr. Cool’s that he is no longer sensitive to the alethic properties of his own beliefs or the alethic properties of Mr. Cool’s beliefs.” (Fairweather 2001, 74)

Drawing on Van Inwagen’s contention, Conrad the “Modal Doxastic Conformist” would come to hold the belief that *P* is possible on account of its being a common and popular belief in his community. Or, in Van Inwagen’s terms, Modal Conrad would come to hold certain beliefs about what is possible as a result of his “immersion in a certain philosophical environment” (Van Inwagen 1998 73). What would lack on part of Modal Conrad is intellectual autonomy, manifested in a lack of epistemic self-reliance. Epistemically self-reliant agents typically form and sustain their beliefs relying on their own faculty and character-virtues, albeit not unreasonably excluding the influence of other epistemic agents on their beliefs (Byerly 2013, 55; Roberts & Wood 2007, 260).

It is, of course, practically impossible to rely only on yourself when forming or sustaining your beliefs, since checking every piece of information is both time-consuming, and, in many cases, beyond our abilities. Note that we have formed a large set of beliefs based on listening to our teachers and professors, that it is a common practice of scientists to verify their work with their peers, and that we often rely on the epistemic authority of experts. As Roberts and Wood say in their (2007), “knowledge builds on knowledge” (261), since there is a relation of dependence between our beliefs and those of other agents. However, showing self-reliance in certain circumstances is a virtuous trait, as, first,

such dependence is not necessary in many cases, and, second, we may put ourselves at risk when depending on irresponsible or inadequate epistemic agents:

“[epistemic self-reliance] is epistemically valuable insofar as it can protect agents from an undue dependence on others for one’s beliefs. In depending on others in forming my beliefs, I make myself vulnerable to the possibility that they may be poor inquirers (perhaps simply not positioned well) or irresponsible inquirers (not employing the appropriate epistemic virtues).” (Grasswick 2018, 196)

A self-relying, intellectually autonomous Modal Conrad would not form, nor sustain, a belief about the possibility of P simply based on the fact that the belief is widely shared in his group. Nor would he take the complacency of the group as a ground for accepting some popular modal statements in his set of beliefs.

Another virtue that is necessary when forming beliefs about possibilities is that of open-mindedness. Following Baehr (2011, 152, 266) and Riggs (2018, 150), an open-minded epistemic subject is able and willing to go beyond their cognitive standpoint and take into consideration the opposite ones¹⁴. An epistemic agent that takes for granted the possibility of, say, zombies, disembodied minds or transparent iron, while not taking into consideration the arguments aimed at showing that either such entities are not imaginable, or that their imaginability is not evidential for their possibility, clearly displays a lack of open-mindedness. Returning to Modal Conrad, the virtue of open-mindedness would cancel out or mitigate the strong influence of the community on his belief system. Although a belief that P is possible may be popular in their group, open-minded epistemic agents take into consideration the opposing stance on the possibility of P, and individually decide whether they should form or sustain the belief.

Now let us turn to Geirsson’s similar view on how modal beliefs and justification are influenced by social factors. In his (2014) paper, he

¹⁴ “An open-minded person is characteristically (a) willing and (within limits) able (b) to transcend a default cognitive standpoint (c) in order to take up or take seriously the merits of (d) a distinct cognitive standpoint.” (Baehr 2011, 152).

notes that there is a certain stigma associated with not finding certain statements conceivable:

“I am placing myself in a somewhat unfortunate position when admitting that I am skeptical about the conceivability of zombies: namely, I am admitting that I have a hard time conceiving of something that many others claim they can conceive of. Ever since Anselm presented his ontological argument there has been a stigma associated with not being able to conceive of what others claim to be able to conceive of. Even the fool, Anselm claimed, can conceive of God and so it took courage to admit that one was even worse off than the fool and could not conceive of what the fool could conceive of.” (Geirsson 2014, 212)

What Geirsson says is not that we are pushed into believing that certain entities are conceivable, since we can believe that they are conceivable while not being able to conceive them ourselves, but that we are pushed into affirming that *we* find them conceivable. The arguments for the conceivability of certain entities carry a powerful rhetorical component that associates stigma – being, say, “foolish” – with not being able to conceive them: unless we can conceive them, there is something wrong with *us*. As Geirsson points out, it takes courage to affirm that we cannot conceive or imagine certain entities. In the following, I will bring into discussion the notion of intellectual courage, as understood in virtue epistemology, and argue that exercising intellectual courage is necessary for justifying modal beliefs.

According to Baehr (2011) and Kidd (2018), an agent *S* manifests intellectual courage in their epistemic activities (e.g., in adopting, sustaining or rejecting a belief) in case they pursue an epistemic good (e.g., knowledge, justification, understanding etc.) despite *S*'s belief that the pursuit of the epistemic good can be harmful to them (Baehr 2011, 169, 171, 176; Kidd 2018, 245). There are various kinds of harms that threaten the pursuit of epistemic goods: they can be social, political, professional or involving bodily integrity (Baehr 2011, 172). In the following excerpt of his (2011, 174-5), Baehr notes that one can face pressure to accept a certain belief, *P*, in spite of the fact that the available reasons point to the opposite belief, not-*P*, and that an exercise of courage can explain an epistemic agent's accepting the right belief:

“Suppose my epistemic community accepts that P, that I am presently on good terms with the other members of this community, but that *they would frown upon me* [emphasis added] if I came to reject P. I have, however, arrived at what seem to me to be genuinely cogent reasons in support of not-P. My situation is *lamentable* [emphasis added]. I have a lot to lose by embracing not-P; nonetheless, I recognize that accepting not-P is the only intellectually respectable course, and in the face of intense pressure to ignore or to try to forget about my reasons for not-P, I proceed instead to countenance these reasons, to bring them before my mind, to focus on them, reminding and reassuring myself of their logical force. The immediate result is that I come genuinely to accept not-P. Clearly this process might involve intellectual courage.” (Baehr 2011, 174-5)

To exemplify, Baehr (2011, 167-8) points to the intellectual courage of John Bahcall and Raymond Davis, two physicists who conducted the Homestake Experiment, an experiment aimed at calculating the number of solar neutrinos. After Bahcall’s theoretical predictions were not matched by the experimental results of Raymond Davis, they started searching for an explanation of the discrepancy. This search lasted for 30 years, while facing “considerable pressure within the profession to alter or abandon their views.” (Baehr 2011,167) For Baehr, their success was due to their exercise of intellectual courage, manifested in persevering, in spite of the potential social and professional harms.

Kidd (2018, 244) points to the intellectual courage manifested by Michael Mann, a climatologist who obtained a strong argument for the anthropogenic global warming hypothesis. The result was met with incredulity and outright aggressive attitude, as Mann received numerous death threats (McKie 2012), and his university was pressured to fire him. In spite of the large number of threats and attempts at discrediting his work and character (Kidd 2018, 244), he persevered to support and disseminate his results, while conscious of all reputational and professional harms.

Drawing from the above, in some situations we are pushed, perhaps at the risk of reputational, social, or professional harms, to adopt certain beliefs. In the case noted by Geirsson, we are pushed to refrain from admitting that we cannot imagine philosophical zombies. If certain entities are generally thought to be imaginable, then we might find ourselves in the “lamentable” situation that Baehr (2011, 174-5) describes: the other members of the community would “frown upon us”

when claiming that we cannot imagine what they can. But, clearly, claiming that we can imagine things when we cannot would be a sign of vicious conformism. Given the social pressure, an exercise of intellectual courage counters this type of conformism and leaves open the possibility of adopting properly justified modal beliefs.

5. Conclusions

The aim of this paper was to argue that intellectual traits of character, or responsibilist virtues, are relevant for modal epistemology. I have dedicated sections 2 and 3 to short presentations of the domains of virtue epistemology and modal epistemology, with an emphasis on distinguishing between reliabilist virtues and responsibilist virtues, and presenting the link between imaginability and justifying beliefs about what is metaphysically possible. Following the work of Kung (2010, 2016) and Gregory (2004, 2010), I pointed that imagining involves two faculties or capacities, i.e., reasoning and memory. In the fourth section I have tracked the relevance of responsibilist virtues in our practice of justifying modal beliefs, by means of four arguments: the argument from the case of reasoning, the argument from the case of memory, the argument from the case of filling scenarios and, finally, the argument from the social nature of modal knowledge.

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