Mind Independence and Modal Empiricism

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Abstract. The paper focuses on the Epistemic Challenge for mind-independent accounts of modality. The challenge can be formulated as an inconsistency problem among three premises and, therefore, any strategy to meet the challenge will require the negation of (at least) one of its premises. The aim of the paper is not to offer a positive solution to the challenge, but rather to argue for the claim that to follow a hybrid strategy is probably the best way to meet it. With some qualifications, reasons are given as to why empiricism should be the way to meet the challenge as far as de re modality is concerned, whereas rationalism might be the correct way of addressing it for the case of

1 The Epistemic Challenge: Rationalism *vs* Empiricism *vs* Skepticism

The framework of the present paper is *mind-independent*. Consider the sentence:

> (S)   The table I have in front of me *can* break.

Is (S), or the proposition it expresses, true? Few people would answer this question in the negative. Assume it is indeed true. What are the truth conditions for (S)? The most natural answer one can think of is that (S) is true if and only if the table in front of me has the modal property of *possibly breaking* (or *being breakable*), as it has the non-modal property of *being rectangular*, or *not being broken*. When we are inclined to think that this answer is correct, we probably have mind-independent intuitions about modality. I shall roughly characterise the notion of *mind-independence* as follows, intending this to be sufficient for current purposes:

> **Mind-Independence**: Given a subject matter, φ, a true φ-statement is mind-independently so if and only if it is not the case that it is true in virtue of facts about the thinkers' minds.

The thesis of mind-independence in the modal case amounts to the thesis that modal truth is independent of facts about the minds of those who think with modal concepts.[1] In less neutral words, mind-independent accounts of modality would locate

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[1] What about 'it is possible that I imagine a flying pig'? The rough definition above seems to commit us to the mind-dependence of such a claim, because, trivially, whether it is true or not depends on what is true about my mind (in particular, on whether my mind is such that its imaginative powers allow for my imagining of a flying pig). This is only a problem of the characterisation just given being a rough characterisation; it is

the truth-makers for modal claims *outside the mind*; that is, the truth-makers for modal claims are to be found in the *extra-mental* world.

If the extra-mental world is provided with (mind-independent) modal properties (with the same ontological status as the non-modal ones), how can we epistemically access them? Our senses give us access to what is actually the case, but it is not clear that they give us access to what is possibly (but not actually) the case, or what is necessarily the case. We may see that the table is brown, made of wood, rectangular, there, covered in papers, and so on. We do not seem to *see* (or *perceive*), however, that the table can possibly break, or that it could be blue, or that it is necessarily made of wood. If we claim to possess modal knowledge, something has to be said as to *how* we can obtain such knowledge. The epistemic challenge that mind-independent theories of modality need to address can be formulated as an inconsistency problem among the following three premises:[2]

(a)   We have modal knowledge, understood mind-independently (i.e., of the extra-mental world).
(b)   Any knowledge of the extra-mental world is grounded on causal affection.
(c)   Any knowledge grounded on causal affection cannot outrun knowledge of mere truths (as opposed to modal truths).

It is easy to verify that premises (a)-(c) are jointly inconsistent. They are, however, two-to-two consistent, and this straightforwardly provides three different strategies to solve the challenge. By denying premise (a), while upholding (b) and (c), we will be *sceptical* about modal knowledge. If we deny that we have modal knowledge, we are thereby denying the existence of the phenomenon to be explained and thus, we solve the challenge by blocking it. If the denial of (a) seems unsound, we then accept the existence of the phenomenon to be explained and, consequently, we must provide an explanation of how we can know modal facts. This is indeed the starting point for most mind-independent modal epistemologists, and this position makes the denial of either (b) or (c) mandatory, since they jointly deny (a).

The debate on whether it is (b) or (c) that we should abandon parallels, respectively, the debate on whether modal knowledge is fundamentally achieved by means of a priori or a posteriori methods. Modal Rationalists deny premise (b) precisely because they ultimately want to claim, *contra* (b), that there is certain knowledge of the extra-mental world which is not grounded on causal affection, and modal knowledge would be an instance of this class of knowledge. Against the rationalists, Modal Empiricists deny instead premise (c), precisely because they ultimately want to claim that *some* knowledge grounded on causal affection does indeed go beyond knowledge of mere truth, and modal knowledge would be an instance of this class of knowledge.

My position regarding the challenge is hybrid in two respects. First, I endorse the knowability (and knowledge) of certain modal facts, while I want to remain agnostic about the knowability of essentialist principles (principles, like Necessity of Origins,

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not, however, a genuine problem for mind-independence. A more precise characterisation should avoid this problem, but we will leave it aside here.

[2] This formulation summarizes the way in which the problem has been traditionally presented in the literature. See, for instance, Benacerraf's formulation of the analogous problem for mathematics in (Benacerraf 1973); or Blackburn's and Craig's formulations of the modal problem, in (Blackburn 1986) and (Craig 1985).

stating the existence of metaphysical laws governing entities at the level of reference). Second, I think that, for some of the knowable modal facts, an empiricist story is to be told, whereas a rationalist one may be adequate for the rest. Consequently, underlying the motivations of this paper there is a disagreement with uniform strategies to solve the challenge. As a matter of fact, furthermore, the dominant tendency among modal epistemologists is to endorse rationalism (partially explained by the persuasiveness of the claim that we are not causally affected by modal facts; idea that underlies premise (c) of the challenge). Because of this, together with my hybrid beliefs, my main target in this paper is not rationalism *per se*, but rather that part of any rationalist story that aims at elucidating the knowability conditions of those modal facts which I take to be only empirically knowable.

The aim of this paper can therefore be seen as two-fold. First, I motivate the claim that we have no decisive reasons to think that mind-independence, per se, necessitates an empiricist epistemology. But secondly, I motivate the need of an empiricist epistemology for that part of the modal realm which is about material entities. Given that modal empiricism (even in the scope-restricted version I am ready to endorse) is minority among modal epistemologists, I offer reasons as well, at the end of the paper, as to why modal empiricism is not to be taken to be epistemically extravagant.

2 Premise (a) and Moral Skepticism

Denying premiss (a) would commit us to scepticism and therefore it would solve the challenge by blocking it, since this denial would amount to the denial of the puzzling phenomenon; namely, modal knowledge. However, the denial of modal knowledge can come in degrees. We can distinguish *total* scepticism (we have no modal knowledge at all) from *partial* scepticism (we have only some modal knowledge). Van Inwagen is clearly not a global sceptic, but he is overtly a quite substantive local one. In "Modal Epistemology", he defends a version of (partial) modal scepticism, compatible with partial epistemic access of what he calls "everyday life" modal claims, but committed to the unknowability of the "remote" ones:

> I [Van Inwagen] am convinced that whatever it is that enables us to determine the modal status of ordinary propositions about everyday matters, this method or mechanism or technique or device or system of intuitions or whatever it should be called is of no use at all in determining the modal status of propositions remote from the concerns of everyday life. I am convinced, moreover, that there is no *other* method or mechanism or technique or device or system of intuitions that enables us to do this. (Van Inwagen 1998, 76)

While I share with Van Inwagen the belief in the knowability of "everyday life" claims (like "this table could be there", or "John Kennedy could have died of a heart attack"), my position with respect to the knowability of the remote ones is, although congenial to his, a bit weaker than Van Inwagen's in that, where he is sceptical, I am at the moment agnostic. For reasons I cannot extend on here, I am agnostic that we are in a position to know essentialist claims like, for instance, "Essentiality of Origin" or "Essentiality of Kind". What I strongly share with Van Inwagen is that modal knowledge need not satisfy an "all-or-nothing" pattern. I do endorse the knowability of modal facts like that *there could not be a married bachelor*, or that *this table*

could be there, or that *John Kennedy could have died of a heart attack*. For these cases at least, a solution to the challenge needs to involve the negation of either premise (b) or premise (c). Before offering a positive epistemology to cover these cases I take to be knowable, a previous question to be addressed is whether all these knowable cases can be satisfactorily covered by the same strategy, or whether different strategies may be necessary. An approximation to this question is the aim of the next section.

3 Towards a non-uniform Modal Epistemology

To the extent that we believe in the existence of (mind-independent) modal knowledge, a story should be told as to how we can epistemically access modal facts. In this section, I will focus on two taxonomical distinctions that apply to modal epistemology, and I will suggest, quite programmatically, that the most promising way of elucidating our epistemic access to the knowable modal facts requires a non-uniform epistemology.

3.1 Top-down vs. bottom-up epistemology

The first taxonomical distinction I will focus on can be labelled "the *bottom-up vs. top-down epistemology*". When applied to the modal case, this distinction is basically the same that Bob Hale (2003) draws between a *possibility-based* approach and a *necessity-based* approach:

This suggests a distinction between two broadly opposed *asymmetrical* approaches to our problem—*necessity-based* approaches, which treat knowledge of necessities as more fundamental, and *possibility-based* approaches, which accord priority to knowledge of possibilities. (Hale 2003, 5-6)

A *bottom-up epistemology* would take possibility knowledge to be more fundamental, and, from here, necessity knowledge (knowledge of the metaphysical laws) would be inferred. By contrast, a *top-down* epistemology would take knowledge of the metaphysical laws (knowledge of necessities) to be more basic and, from them, possibility knowledge would be deductively acquired.

There is no doubt that a top-down epistemology (whether rationalist or empiricist) is a very attractive strategy. If we could make it work, it would be an extremely powerful story in terms of its elucidatory power. One would only need to elucidate our epistemic access to the axioms of the modal realm, and the rest would thereby be automatically covered. However, it is precisely because of this potentiality that they are in turn very fragile. If we are to endorse a top-down strategy and take it seriously, we should be ready to commit ourselves to the knowability of *all* metaphysical laws. In other words, the overall successfulness of a top-down epistemology directly depends on how successful the proposal is in elucidating the knowability conditions of the metaphysical laws. The reason is as follows. Consider the everyday life modal fact that *my table could be broken*. Whether we know it or not depends, on top-down strategies, on whether we know this possibility fact to be permitted by the (set of *all*) metaphysical laws. Unless we know (and have elucidated the knowability conditions of) all metaphysical laws, our claims of knowledge of possibility facts are epistemically deficient. For, if we only know some of them, but not all (or we know them all

but do not know them to be all), the following situation cannot be theoretically ruled out. It could be that the modal fact that *my table could be broken* is not ruled out by any of the *known* metaphysical laws, but it could still be that, amongst the *unknown* essentialist principles, there is one implying that *my table is (essentially) unbreakable*. Given this, in order to claim knowledge of possibilities, in top-down strategies, we need to know that they are not ontologically ruled out by any of the metaphysical laws. Therefore, top-down epistemologists, to the extent that they want to assert knowability of possibility facts, need to commit themselves to the epistemic access to all metaphysical laws.

Is this bad for top-down strategies? I think it is. Not because this is a very strong commitment (which it is), but, more importantly, because it is highly controversial. The epistemic accessibility to conceptual necessities may not appear to be especially problematic to most of us. We may agree that we know most conceptual necessities like *necessarily, there are no married bachelors*.[3] However, among the metaphysical axioms, there are (perhaps!) essentialist principles like *Essentiality of Origin*, or *Essentiality of Kind*, and both their truth (if true) and their knowability conditions are far from being epistemically unproblematic. An important contrast to be stressed here is that, whereas most of us would find essentialist principles epistemically problematic, everyday life claims like *my table could be broken* have a much better claim to be known (and therefore knowable). This contrast is important here because it suggests that the best strategy for us to follow is to endorse an epistemology such that, the elucidation of the knowability conditions of the later do not depend on the elucidation of the knowability conditions of the former. A bottom-up epistemology, unlike a top-down one, is such a strategy. Because of this, and despite the fact that bottom-up strategies are not as initially attractive as top-down ones, we may want to explore the prospects of a bottom-up strategy and see how far we can get with it.

In the next sub-section, I will focus on the second taxonomical distinction; the *epiricism/rationalism* one. Before that, however, let us advance that the two distinctions cut across each other. Even though they technically do so, rationalism tends to go with top-down strategies, whereas empiricism matches much better with bottom-up ones. Empirical sciences illustrate very clearly how a bottom-up epistemology goes. From empirically known data, knowledge of the laws of nature is acquired by ampliative methodology, and epistemic doubts about our knowledge of the laws of nature amount neither to epistemic doubts about our knowledge of the data nor to doubts about their knowability conditions.

If we try to apply a bottom-up epistemology in the modal case, we should start by attempting to elucidate the knowability conditions of those everyday life modal claims we all seem to agree to be knowable. Of course, nothing guarantees that the data we have available will be enough to uniquely determine the metaphysical laws. However, to the extent that the knowability conditions of the everyday life claims have been elucidated, the unknowability of metaphysical laws (or, if knowable, their puzzling knowability) will not be as problematic as in the top-down strategies, since it will not amount to the unknowability of everyday life claims.

Although not theoretically mandatory, *rationalist* proposals, when asymmetrical, tend to be *top-down*. Hale himself (2003) is a rationalist who favours a *necessity-*

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3 And yet, note that *merely most* would not be enough for a top-down epistemology.

based approach. The same is true of Peacocke's rationalist proposal.[4] To defend the same in the case of conceivability approaches is more complicated. To begin with, it is not clear that conceivabilists would agree that their epistemology is *asymmetrical* in the sense pointed out by Hale (2003). Second, if it were asymmetrical, it would *prima facie* seem that they are possibility-based rather than necessity-based, since their strategy is best understood as inferring in the first place *possibility* knowledge from knowledge about conceivability facts. For reasons I cannot elaborate on now, however, conceivability strategies can be said to work only if they beg the question at a crucial point, where they would need to assume the availability of essentialist principles, which would make them implement, contrary to appearances, a top-down strategy.

Even if not a very strong one, I take the failure of the top-down rationalist proposals[5] as an inductive reason to suspect that their overall strategy is not on the right track. This, however, needs qualification. It turns out that the weakest point of top-down rationalism concerns, at first, the knowability conditions of essentialist principles, and, derivatively, the knowability conditions of *de re* possibilities. By contrast, they seem to be working fine when it comes to conceptual necessities and conceptual possibilities. This contrast makes me consider, as a working hypothesis, that a non-uniform epistemology should be the one we need to attempt at: top-down (rationalism) for the case of *de dicto* modality, whereas bottom-up (empiricism) for *de re* modality. In the next section, I will elaborate on some independent reasons for this working hypothesis (and for qualifying it) by focusing on the *empiricism/rationalism* distinction.

3.2. Rationalist vs. Empiricist Epistemology

The general tendency among modal epistemologists is to go for (top-down) rationalism. Intuitions govern modal judgement and, although not always explicitly enough, they play an important epistemic role in rationalist accounts of modal knowledge. Efforts have been made to clarify the notion of *intuition*, and alternative notions (though not necessarily clearer) have been introduced in the literature in an attempt to clarify and dignify its epistemic significance. As a result, 'rational insight', 'intellectual seeming' or '*rational* intuition' are semantically close labels trying to emphasize the epistemically significant part of intuitions (their probative force, as Sosa (2007) puts it). It is no aim of this paper to clarify this notion. I will, nonetheless, talk about intuitions, especially in this section. The only thing about intuitions that should be of interest to us now is that they lie at the heart of a priori reasoning, and, in particular, as pieces of *evidence* grounding a priori principles. This is how Bealer puts it:

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4 On Peacocke's approach, modal knowledge is neatly analyzed as consequential upon our knowledge of the "Principles of Possibility", which are precisely the axioms of the modal realm. (See (Peacocke, 1999)).

5 I have in mind, especially, the failure of three of the most salient rationalist proposals: Yablo's, Chalmers' and Peacocke's. The formulation of the criticisms against these account are beyond what can be addressed in this paper, but I have done so in my PhD dissertation, ch.V (Roca, ms.).

> Intuition is the source of all non-inferential a priori knowledge – except, of course, for that which is merely stipulative. (Bealer 2004, 12)

But when did intuitions come into the picture in the first place? As one may guess from the formulation of the Epistemic Challenge, there are certain subject matters, like modality or mathematics, for which the *causal account of knowledge*[6] seems to be inadequate. We do not seem to be in causal connection with modal or mathematical facts, but we do seem to have mathematical and modal knowledge. A *different* account of knowledge that explains this kind of non-causally grounded knowledge is then asked for, and intuitions (plus a priori reasoning based on them) have seemed to be the best candidates to play this grounding role. However, not all intuitions are to be given the same epistemological weight. This raises the question of which intuitions are to be given epistemological weight and how much. More importantly, it also raises the question of whether there are some *criteria* for deciding the epistemological weight that may be given (faultlessly) to a certain intuition. Let us draw three situations that will help us to formulate three criteria whose truth we may want to explore as working hypothesis:

> **Situation 1**: We are all sitting in our armchairs in Seminar V, and *we all* have the strong intuition that in the room next door there are exactly three wooden tables.
> **Situation 2**: We are all still in Seminar V, and *we all* have the strong intuition that there is no last natural number.
> **Situation 3**: Still in Seminar V, and problems begin. Some of us have the strong intuition that we could be born from different parents, whereas some have the strong intuition that we could not, and the remaining ones have no intuition at all with respect to this.

The first reaction to Situation 1 is that, appealing only to the intuition we all have in that situation in order to establish that there are exactly three wooden tables in the room next door would be epistemically aberrant. By contrast, we would be far more sympathetic to giving epistemological weight to the intuition we all have in Situation 2. We may want to go even further and claim that only *sceptical* considerations would object the step that goes from that intuition to our assertion that there is no last natural number. The contrast between situations 1 and 2 seems to indicate that *non-causal accounts of knowledge* are not intended to replace causal accounts, but rather to be complementary of them, to cover those subject matters for which the causal account appears inadequate. Such contrast suggests this first criterion:

> **Subject Matter**: It is epistemically inadequate to give grounding power to intuitions that are about the material world. For material-world issues, empirically checking is epistemically mandatory.

Situation 3 is pressing in this respect. For, many would claim that the intuition in that situation does not seem to be about the *material* world (it would be claimed, instead, that it is an intuition about what is the case at some *other* (or *all*) possible worlds). Yet, it seems that the disagreement among equally rational epistemic peers

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6 Paul Benacerraf (1973), characterizes the *causal account of knowledge* as one on which "for *X* to know that S is true requires some causal relation to obtain between *X* and the referents of the names, predicates, and quantifiers of S" (Benacerraf 1973, 661).

does not allow us to achieve a generally accepted view on the matter. The uncomfortable phenomenon here, and the epistemic difficulty, is that, when the rationality of the subjects having incompatible intuitions is not in question, heterogeneity in judgement across subjects is reason enough to distrust one's intuitions. A liberal use of intuitions cannot then be allowed by *non-causal accounts* of knowledge. The contrast between Situation 2 and Situation 3 suggests the following as a further criterion we may want to pay attention to:[7]

> **Substantial Disagreement**: It is epistemically inadequate to give epistemological weight to one's intuitions when (it is known that) there is a substantial part of the community that has incompatible reactions.

The adequacy of both the Subject Matter and the Substantial Disagreement criteria (or some version of them) is endorsed here.[8] We should notice, however, that these two criteria are rather weak. They do not give us an answer to the question of *when* it is adequate to give intuitions epistemological weight; they only mention two cases in which it would not be adequate. Therefore, for all that is implied by these two criteria, it may be inadequate to use intuitions even when the subject matter is other than the material world and there is no disagreement on intuitions. Even if weak, however, they are nonetheless informative. For they give us a hint of why areas in philosophy that generate 3-like situations (as seems to be the case with Modality) are, in general, on bad epistemological grounds. These are areas that were (assumed to be) not covered by the *causal account of knowledge*, and it may turn out that non-causal accounts based on intuitions do not solve their epistemic problems either.

On the basis of this, an answer to the possibility conditions for modal knowledge seems to be especially difficult because, on the one hand, it *prima facie* seems that modal intuitions must have *some* grounding role to play. This is partially due to the fact that the claim that we do not perceive modal properties seems to be something we all agree on. On the other hand, however, and due to what seem to be genuine conflicts of intuitions, it also seems that we cannot make *much* of intuitions. These considerations may suggest a pessimistic diagnosis regarding the knowability conditions for modal facts (pessimism that would amount to the denial of premise (a) from

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[7] The epistemic problem that this lack of agreement raises to the epistemological weight given to intuitions has also been pointed out by Parsons (2000) and Williamson (2004). According to Parsons, the problem is that "if we think of intuition as a fundamental source of knowledge, then in theoretical maters intuitions should be stable and intersubjective, but […] disagreements in "intuitions" are very common in most fields" (Parsons 2000, 305). On Williamson's views, "given the apparent absence of a substantial body of agreed results in philosophy, crude rationalism is not easy to maintain" (Williamson 2004, 2).

[8] Empirical considerations supporting Subject Matter will be offered at the end of this section. With respect to "Substantial Disagreement", I do not want to commit myself to the claim that *awareness of disagreement* undermines one's *justification* for believing in the content of a given intuition; this is stronger than I believe and than I need. However, I do take it that the phenomenon of *disagreement of intuitions* undermines any claim to *knowledge* by us *as a community*. In this sense, and because of the existence of substantial disagreement among equally rational epistemic peers, we, as a community, do not know yet, for instance, whether origins are essential to originated entities.

section 1). A pessimistic conclusion based on them, however, may be too hasty, since there appear to be two different strategies to block pessimism.

In the first place, and contrary to what we seemed to concede just above, it is not fully uncontroversial that the subject matter of modality is not the material world. For *de re* modality at least, the claim that its subject matter comprises the concrete *res* out there has, or so I take it, some plausibility. To the extent that this is so, it is not yet a given that the causal account of knowledge could not explain (at least some) *de re* modal knowledge. In other terms, causal affection could still be the means by which we attain *de re* modal knowledge (this would involve the negation of premise (c)).

As a second strategy to block pessimism, it may be contended that what appear to be *genuine* conflicts of intuitions are only apparent conflicts. Intuitions are not unrevisable, and not every conflict of intuitions is unsolvable. A particular intuition may be revised as a consequence of realising, upon reflection, that it contradicts a belief or intuition we are not ready to drop, and the revision of that intuition on the side of those who had it may in turn diminish (or even dissipate) the disagreement between the members of the community about the truth or falsity of the content of that intuition, thereby showing that the initial disagreement was not an unsolvable 3-like situation. To the extent that this is so, it is not yet ruled out that we may (faultlessly) take intuitions as a reliable source of modal knowledge (this would amount to the denial of premise (b)).

If we were to follow the first (empiricist) strategy, the Subject Matter criterion would indeed tell us that the use of intuitions in (*de re*) modality is inadequate, but would in turn address us to the *causal account of knowledge* for that part of the modal realm. Notice that such a criterion is silent, however, about which account of knowledge should we favour in the case of modal facts about non-material entities. If we were to follow the second (rationalist) strategy, Substantial Disagreement, by itself, would not yet sanction our use of intuitions as inadequate (further reasons for the genuine insolvability of our conflicts of intuitions would be needed for this). Furthermore, if the conflicts were solvable, Substantial Agreement (to be discussed in short) would tell us that we may give intuitions a grounding role:

> **Substantial Agreement**: For the non-material world issues, it is in general epistemically adequate to give epistemological weight to one's intuitions when there is a substantial agreement with the rest of the members of the community.

I have no principled reason against any of these two strategies. In fact, I am inclined to think that *both* strategies are to be followed, though in different sub-areas of modality. Although not unique of modality, there is an interesting feature about it. Namely, that the question about its *aboutness* has no single answer. To begin with, *de dicto* modality seems to be about something rather different from *de re* modality. I take it not too risky to say that *de dicto* modality is about concepts and their constitutive relations (and, consequently, about *contents*), whereas *de re* modality is about entities at the level of reference. Because of what *de re* modality is about, in turn, this sub-area is also heterogeneous regarding its *aboutness*. In a relaxed sense (i.e., nominalist worries aside), concepts and numbers, for instance, can be referred to no less than chairs and apples. So, *de re* modality is partially about material entities, and partially about abstract entities.

It is in part because of this heterogeneity in subject matter within modality, that I have no principled reason against any of the two strategies identified above to block pessimism. Rather, precisely because I think that this heterogeneity has significant epistemological consequences, I am suspicious about any *uniform* attempt to meet the epistemic challenge in modality; that is, about any attempt to meet it that is not sensitive to this heterogeneity.

By way of anticipation, I shall say that the first strategy is the one I find most worth exploring for the case of *de (material) re* modality, whereas the second one is the one I would attempt in the first place for the case of *de dicto* modality and *de (non-material) re* modality. In the remaining of this section I give my reasons for this.

We can distinguish two different (though closely related) roles that intuitions play in philosophical discussions. First, there is the role of *epistemically grounding* the principles that are based on them. Second, when there are conflicts of intuitions, there is the *dialectical* role of let intuitions compete against each other in order for us to decide which *set of intuitions* is the strangest one.

Examples of the *grounding role* of intuitions are ubiquitous in philosophy. For instance, the intuition (which not everyone has) that, given a particular manufacture process, o, a particular artefact, c, will be its outcome, grounds *Sufficiency of Origin* principles. Similarly, the intuition (not universal either) that a particular artefact, c, actually originated from o, cannot be the outcome of any other manufacture process, o', grounds *Necessity of Origin* principles. In these and similar cases, intuitions are appealed to in order to ground some principle that would then be used as a premise in some philosophical argument. When intuitions are playing this first role, substantial agreement of judgement across subjects reveals to be very important.

This is the first place in which a comparison with perception may be helpful. I take it that (the perceptual version of) the Substantial Disagreement criterion is also in place for the perceptual case. If it were common that our perceptual judgements were not substantially homogeneous across subjects, *mere* perception by only *some* could not be taken as a reliable access to the material world. Imagine, for instance, that it were a common phenomenon that, each time, only 50% of the population perceived some object, while the other 50% did not, and that, furthermore, it was not always the same 50% that perceived it in each occasion. Suppose further that the fact that some (seemed to) perceive a certain object was not always due to the fact that such an object was indeed present. It seems hard to claim that, if that were so, the fact that some (seemed to) perceive a bottle on a given occasion would be in itself sufficient for the assertion that there is a bottle there. For such an assertion to be epistemically faultless, we would rather need other sources of evidence that the bottle was indeed there (if it was indeed there). Surely, that was no more than a thought experiment.[9]

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[9] Real cases, however, may also be also available. The implicit assumption of Substantial Disagreement is, it seems to me, the reason why we would be inclined to think that those who assert the existence of ghosts, for instance, are epistemically faultful. Ghost-perceptions are not agreed across subjects. The ones that seem to have ghost-perception experiences are, *prima facie*, justified in believing that there are ghosts. However, knowledge that a substantial part of the population do not see what they "see" seems to be sufficient to undermine this prima facie justification. In the presence of substantial disagreement, perception by *only some* is insufficient for us, as a community, to know about the existence of ghosts.

The real common phenomenon in perception, however, is that there seems to be substantial agreement across subjects. In perception, therefore, (the perceptual version of) Substantial Disagreement could only be vacuously applied. What seems to be useful in the perception case is a principle telling us what to do when there is substantial agreement. When we all agree that we perceive a bottle, and when this is the common phenomenon, we may faultlessly assert that there is a bottle there. In this very last thought, however, we used something stronger than Substantial Disagreement; the perceptual version of Substantial Agreement was the principle appealed to.

If, back to the case of intuitions, we push this thought to where it seems to lead us, we may even dare to say that, were we to agree on any single intuition, we would stop enquiring. If we go this way, we will certainly be making the same substantial jump, from: *lack of agreement on intuitions being sufficient for epistemic inadequacy*, to: *agreement being sufficient*. The former is no more than what is encoded in Substantial Disagreement, and I find it, as in the perception case, essentially correct. The latter is what is encoded in Substantial Agreement, and I am a bit more doubtful about it. I am certainly not in a position to commit myself to the claim that *agreement of intuitions* is all what it takes for it to be epistemically adequate to appeal to them in the first of the two roles distinguished above; the *grounding role*.

Although I do not want to commit myself to this thought, however, I am strongly sympathetic to it and, therefore, I do want to address a worry that its truth (if true) may generate. The worry comes from the thought suggested above that, were our intuitions to agree on everything, we would stop enquiring. This may sound to some as the description of a very unprofessional activity. In effect, mere agreement among all members may still seem to be too weak for it to constitute a robust epistemic foundation for our beliefs. After all, could not *we all* have the wrong intuitions? However, the charge of unprofessionality may arguably be too hasty, and the worry could be argued to be a *sceptical* worry. For, there may be an explanation why homogeneity of judgement is relevant for dissipating epistemological worries. If rational insight of equally rational agents were good enough to make us *all* agree on something, this could indicate that rational insight *is our way to accessing this something*. One may suspect that this thought is actually an implicit assumption in philosophical activity, and also the responsible for our satisfaction when we all happen to reach a point of agreement.[10] It may be helpful here to extend the analogy with *perception* a bit further. One may ask: Why are *causal accounts of knowledge* in such a good position regarding the epistemology of *concreta*? If perception is good enough to make us *all* agree on our perceiving a bottle on the table, this may indicate that perception *is our way to accessing the bottle*. On the presence of substantial homogeneity of perceptual judgements, it seems that we are warranted to take perception as a reliable way of accessing the material world. It seems also that we are allowed to take the worries concerning our inferences based on perception to be *sceptical* worries. In the case of perception, therefore, we are indeed making the substantial jump from: *lack of agreement would not warrant our inferences*, to: *agreement warrants them*, and this jump seems to be challenged only by *sceptical* worries that we may ignore in

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10   Arithmetic gives us quite a lot of examples of points of agreement: That two plus two equals four, or that there is no last natural number, for instance, are "truisms" susceptible only to sceptical challenges. Unfortunately, I am not able to give an uncontroversial example of point of agreement in modality, in which not even the *necessity of identity* is unchallenged.

our everyday life. Therefore, even if I do not want to commit myself to the analogous conclusion for the case of intuitions, we may find in perception a parallelism that suggests the adequacy of Substantial Agreement also for the case of intuitions. Certainly, *epistemic worries* may arise here as well. But, if the analogy with perception admits one more extension, we should conclude that they are worries we may ignore in our everyday philosophy.

How can we apply this to modality? It would be interesting in itself to discuss further about the adequacy of Substantial Agreement. Specially because, for that part of modality that is not about material entities (that is, *de dicto* modality and *de (abstracta) re* modality), the *causal account of knowledge* does seem indeed to be ineffective, and, furthermore, because in that part of the modal realm is where one can find a significant number of local cases of substantial agreements. Because of this, we will eventually need to know whether Substantial Agreement is correct, in order to apply it (or not) in those areas where agreements are abundant. I will, however, leave the discussion here, and focus now on *de (material) re* modality, which is where disagreements are abundant, especially when it comes to essentialist principles.

In the presence of what seem to be substantial disagreements, a previous task to be done (before even discussing whether Substantial Agreement would be adequate for *de (material) re* modality) is that of trying to see whether the disagreements are due to genuine mismatch of intuitions, or whether they are solvable by further reflection and revision. With this, we are focusing on the second (*dialectical*) role that intuitions seem to play in philosophy. This is the role of making intuitions fight against each other, to let the strongest *set of intuitions* win. When intuitions are playing this *dialectical* role, the *grounding* role is not exploited in itself. Instead, a discussion on the first role is left aside, and we take a set of intuitions (or the principles supported by them) and examine what consequences one may draw from them to see whether we are ready to endorse them all, or whether we rather would prefer to renounce some of the initial intuitions. This is, as well, a ubiquitous practice in philosophy (the neatest example about which is offered by philosophical paradoxes). The ideal point is that in which, at the end of the day, we achieve a massive point of agreement. This would be the right time to resume our (frozen) discussion about Substantial Agreement. Now that we would all agree on which set of principles (supported by intuitions) are correct, it would be crucial to know whether this massive agreement is enough for (epistemically faultlessly) asserting the principles in that set. However, how optimistic should we be about reaching a massive point of agreement in the *de (material) re* case? As indicated above, there seems to be a significant number of agreement points in *de dicto* modality and I am inclined to think that rational insight and a priori reasoning alone is effective enough in making us agree on matters of conceptual necessities and possibilities. This is an area in which, for the reasons above, I could be ready to apply the Substantial Agreement criterion. It is *de (material) re modality* that I am much less confident about the eventual possibility of reaching points of substantial agreement.

There seems to be an a posteriori lesson to be learnt from the fact that local points of agreement are more common in areas (or sub-areas) in philosophy that are not about the material world, whereas substantial agreements in ontology in general, or *de (material) re* modality in particular, are much harder to find. I take this empirical data as supporting the claim that, whereas intuitions and a priori reasoning based on them *may be* our way to epistemically accessing the *abstracta*, they don't seem to be our way to accessing the *concreta*. In other terms, I take this data as supporting both the

Subject Matter criterion and the Substantive Agreement one. The idea underlying these two criteria is by no means a new idea.[11] The reason why I stress it here is because of its consequences for modal epistemology, to the extent that we are sympathetic to the idea that the subject matter of modality is heterogeneous.

In order not to take this data as supporting something stronger than it actually supports, it is convenient to note that, at most, this data supports only the *actual truth* of the Subject Matter criterion. It does nothing to support its necessity. This is not, however, a shortcoming in relation to our current concerns. I take it that when we ask "how is modal knowledge possible?" we should be understood as asking "how we *as we are* can obtain modal knowledge?". Therefore, the *actual truth* of the criterion is good enough to start answering this question.[12]

To sum up, we noticed a difference in subject matter of different sub-areas in modality. We formulated as working hypothesis three epistemic criteria we may want to pay attention to when addressing the epistemic challenge in modal epistemology. It turns out that (in this world and as we are) there seems to be a correlation between the subject matter of intuitions and our agreements or disagreements about them. This a posteriori data, together with a comparison with perception, has been taken to support the (actual) truth of the Subject Matter and the Substantial Agreement criteria. (The truth of Substantial Disagreement was assumed, rather than motivated, partially on the basis that the epistemic problems that the phenomenon of disagreement poses is something widely accepted across epistemologists, even among rationalist). The conclusion is that we should work under the hypothesis that a non-uniform modal epistemology is to be expected to be the adequate way of meeting the epistemic chal-

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[11] Katz (1995), for instance, distinguishes the object of study of pure geometry (abstract), and the object of study of applied geometry (concrete), favouring, respectively, a rationalist and an empiricist epistemology: "On a realist view, a pure Geometry, Euclidean or otherwise, is a theory of a class of abstract spatial structures. In a complete theory, its principles express the possibilities of figures and relations among them within a space. Anything that conflicts with the principles is an impossibility in the space. Grammars [...] can be conceived in a similar way. [...] In making a place for the notions of necessity and possibility in connection with pure geometries and pure grammars, we can bring geometric and grammatical knowledge under the scope of our rationalist epistemology. In Katz (forthcoming), I present an account of the distinction between pure and applied geometries, pure and applied grammars, etc, in terms of the different kinds of object they study." (Katz 1995: 512-3, footnote 14)

[12] I intend this to dissipate the following worry about the Subject Matter criterion. This criterion says that it is inadequate to give grounding power to intuitions that are about the material world, and that for material-world issues, empirically checking is epistemically mandatory. But what if our intuitions about the material world were agreed by the most of us? I am ready to agree that, in that case, the claim that intuitions plus a priori reasoning based on them would be an alternative epistemic route to the material world could have some plausibility and, therefore, a case could be made against the necessary truth of Subject Matter. It is to be noticed, however, that the *actual* phenomenon is that we do not agree on intuitions about material entities. Therefore, a world in which we do agree can only support the *possible falsity* of Subject Matter: we *could be* such that our intuitions allowed us to track truth about the material entities. For the reasons alluded to in the main text, I am happy with this possibility, and it should be noticed that it does not affect the reasoning in this section.

lenge in modality. This is of course just a recipe, not the meal. A positive account of modal knowledge still needs to be developed. Such an account will be partially rationalist and partially empiricist. Since rationalism is more frequent among modal epistemologists than empiricism, I take it that the part of the (to-be-developed) positive account that will generate more reluctance will be that part aiming to elucidate the knowability conditions of *de (material) re* modal knowledge, because this will be the empiricism part. Because of this, I want to finish the paper by motivating (in the next section) the claim that the combination of modal empiricism plus mind-independence is not epistemically extravagant.

4. Empiricism for *de (material) re* modality.

The naïve starting point is as follows:

> I know that the table in front of me, which I use to call '*Messy*', is not broken. How do I know that? I see it. Although not broken, *Messy* can break. How do I know that? Because the table I had before *Messy*, which we may call '*Twin-Messy*', was a twin-sister of *Messy*, and it broke; and I know that *Twin-Messy* broke because I saw it.

The working hypothesis is that the naïve reasoning in the answer to the second question (about the source of modal knowledge) is epistemically satisfactory. That *this is how* we know about *Messy*'s unrealized possibility of breaking, and that this is also how we, in fact, reason about unrealized (but not yet *expired*) possibilities[13]: "I use the safety-belt because I might have an accident; accidents happen to my fellows, and I am not different in this respect". Although the claim that this kind of reasoning is *knowledge*-yielding may be controversial, the statistical degree of success is something not to under-estimate: at a future time, we may have had an accident.[14]

A further thought supporting empiricism, which is in harmony with the first and was discussed in the previous section, is a conjunction of two further working hypotheses. First, that the subject matter of *de (material) re* modality are *concreta* and, second,

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[13] The notion of *expired possibility* is to be understood as capturing metaphysical possibilities for a world or inhabitants of a world whose actualization has been ruled out by the actualization of *another* possibility metaphysically impossible with the first. For instance, John Kennedy's possibility of dying of a heart attack *expired* from the moment he was shot dead. This is not to say that dying of a heart attack *ceases to be a possibility* of John Kennedy. It is still true that John Kennedy could have died of a heart attack. It is to say, however, that John Kennedy's actualization of the former possibility excludes the actualization of the latter, given the metaphysical incompatibility between the two actualizations.

[14] This is to say that beliefs about not yet expired possibilities can be proved to be true by the future, and that, when this happens, our judgements about the epistemic adequacy of the methodology used to justify those true beliefs gets thereby strengthen.

that the Subject Matter criterion is essentially correct. These two things imply that *de re* modal knowledge about *material* entities depends on empirical knowledge.[15]

A first look at the naïve starting point reveals several things involved there, among which five are salient. First, it is assumed that perception gives us epistemic access to non-modal facts about entities *out there* (I know that *Messy* is not broken because I *see* it). Second, some version of *counterpart theory* is also involved in this reasoning (what happens to *Twin-Messy* tells us about what could happen to *Messy*). Third, counterparts of actual entities may be found in the actual world (*Messy* and *Twin-Messy* are both counterparts and @-mates). Fourth, perception gives us epistemic access to these counterparts (I know that *Twin-Messy* broke because I saw it). Fifth, the counterpart relation is somehow linked to similarity (*Messy* and *Twin-Messy* are twin-sisters). Given this, a further working hypothesis is that all these things will probably need to be involved in a satisfactory non-rationalist epistemology.

The working hypothesis is therefore that, for the case of *de (material) re* modality, premises (c) is false, and premise (b) is on the right track. However, I need to qualify its endorsement. Premise (b) has a *weak* and a *strong* reading. According to its weak reading:

> (w-b)   Knowledge of the extra-mental world must be (at least) *partially grounded* on causal affection.

On its strong reading, it says that:

> (s-b)   Knowledge of the extra-mental world must be *exclusively grounded* on causal affection.

This *weak vs. strong* distinction is a distinction between two different degrees of commitment with respect to the *content* of premise (b). Apart from this, a further distinction to be drawn is that between a *global* and a *local* commitment with respect to the *scope* of (b): one can deny or endorse premise (b) *for all* disciplines whose subject matter belongs to the extra-mental world or for only *some* of them. These two distinctions cut across one another.

It is easy to see that the consequences of a *global* endorsement of (s-b) (i.e., an endorsement of (s-b) *for all* the disciplines whose subject matter belongs to the extra-mental world) would be devastating in general. This would be an untenable form of extreme empiricism. Extreme empiricism, however, does not seem to be the general epistemic position. Even the epistemic practices of the so-called 'empirical sciences', whose subject matter is the *material*-world, indicates that (s-b) is rejected, whereas (w-b) is the one endorsed. Let us illustrate this. Our knowledge that all ravens are black is certainly grounded on causal affection (on our observations of black ravens, and only black ravens). It is familiar, however, that it is not only grounded on this; it is also grounded on *induction*. Yet, knowledge that *all ravens are black* is still knowledge of the extra-mental world. My knowledge that Saturn was very bright last week, to give a second example, is certainly grounded on my observation of Saturn last week. However, it is not only grounded on this; it is also grounded on my *mem-*

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[15] This dependence claim is stronger than the post-Kripke/Putnam rationalist claim according to which knowledge of *a posteriori* necessities depended on empirical knowledge. The current dependence claim is intended to be understood as a claim about the existence of *fundamentally a posteriori de re* modal knowledge, whereas, according to the rationalist, a posteriori necessities are nonetheless *fundamentally a priori*.

ory of that observation. The epistemological assumption here seems to be that not only observational methods but also non-observational ones (deduction, induction, abduction, extrapolation, memory, and even testimony) are epistemically adequate to *ground* knowledge. This epistemological assumption seems to be widely accepted across disciplines, and many practices that are assumed to be knowledge-yielding rest indeed on the assumption of the epistemic adequacy of these non-observational, ampliative, methods. In other terms, in the so called 'empirical sciences', observations seem to be no less essential than the non-observational methods we apply to them. On the basis of this, the following criterion qualifies the Subject Matter one:

> (♠)   When it comes to disciplines whose subject matter is the *material* world, there are strong reasons to *endorse* (w-b): our knowledge that all ravens are black *needs* observations of black and only black ravens; and there are also reasons to reject (s-b): it *equally needs* non-observational methods.

Let us recapitulate a bit. We have a set of disciplines taken to be *mind-independent*, meaning by this that their subject matter is taken to belong to the *extra-mental* world. We have a debate on whether an adequate epistemology for these disciplines is to be *a posteriori* or *a priori*. If it is to be *a priori* for some and *a posteriori* for the rest, we need a criterion for where to draw the line. We do not have a drawing-line criterion (and a discussion on this goes beyond the scope of this paper). But we seem to have a criterion to argue *against the aprioricity* of some disciplines. Under the working hypothesis that (♠) is correct, this may work as a criterion which tells us that, if the subject matter is the *material* world, then, an adequate epistemology for that discipline should not be *aprioristic*. As it happened with the Subject Matter criterion, (♠) is silent about what happens with the disciplines whose subject matter is not the material world, and, therefore, it does not allow us to globally extend it to other extra-mental subject matters. However, it may nonetheless serve us to draw a provisional line (to be further pushed up if more anti-aprioricity results appear)[16]. The relevant thing here is that this provisional line that (♠) draws cuts *modality* into two: An adequate epistemology for *de dicto* modality and for *de (abstract) re* modality may be, for all we know, aprioristic. By contrast, an adequate epistemology for *de (material) re* modality will need to include, if (♠) is correct, empirical grounding elements.

   In relation to our current concerns, the positive impact of (♠) comes from what follows. Knowledge of the *concrete*-world that is *only partially* grounded on causal affection can be characterised by the fact that it transcends what causal affection directly informs us about. We will call here this kind of knowledge 'causal-affection-transcendent knowledge'. Our knowledge of the past, for instance, is partially grounded on causal affection by being grounded on (past) observations; but it is also grounded on methods other than observational ones (sometimes on memory, sometimes on testimony, and most of the times on a combination of the two). The way our knowledge about the past is causal-affection-transcendent is by being *present*-transcendent. Similarly, the way our nomological knowledge is causal-affection-transcendent is by being *data*-transcendent. (*De re*) modal knowledge is causal-

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[16]   That is, if convincing reasons against Substantial Agreement where offered that would imply the requirement of empiricism even for mind-independent theories about *abstracta*.

affection-transcendent as well. The way in which modal knowledge is so transcendent is by being *actuality*-transcendent. The hope for an adequate empiricist epistemology that explains this sort of knowledge comes from the fact that, if the door is open for causal-affection-transcendent knowledge partially grounded on causal affection, then, the claim that the door is not closed, at least in principle, for *modal* knowledge partially grounded on causal affection should probably be our default position.

As we indicated in the previous section, top-down rationalist proposals have special difficulties in elucidating the knowability conditions of essentialist principles, and, derivatively, possibility knowledge in general. When the door is not closed, at least in principle, for modal knowledge partially grounded on causal affection, I take it that the impact of the failure of the rationalist proposals in elucidating *de re* modal knowledge gives us additional (inductive) support to what should be, on the basis of (♠), our default position about *de (material) re* modal knowledge. We collect a great many observations of material entities. Furthermore, we may (epistemically adequately) use non-observational methods that, applied to these observations, allow us to transcend them some direction or other. At a first approximation to the shape that an empiricist modal epistemology may take, these two things may count as, at least in principle, sufficient to transcend *actuality*. If this is so, it all seems to indicate that, for the case of *de (material) re* modality, we should attempt to proceed as empirical sciences do: bottom-up, and empirically.

Given the (a)(b)(c) inconsistency, and when premise (a) is assumed to be in place, the endorsement of (w-b) for the case of *de (material) re* modality amounts to the denial of (c). By endorsing (w-b), we are committing ourselves to the claim that knowledge (partially) grounded on causal affection can indeed outrun knowledge of mere truth (can transcend actuality). The way it *can* outrun mere truth is by being also partially grounded on non-observational methods that would allow us to "take off" from actuality. Furthermore, the use of observational plus non-observational methods involves no mysterious cognitive capacity. The cognitive capacities employed here are the same we use in empirical sciences to arrive at, for instance, nomological knowledge. If some applications of these non-observational methods to observations bring us to the no-longer-observable past, and some bring us to the non-observed ravens, and still others bring us to non-observed causal powers, physical laws, electrons, quarks, etcetera, then, the claim that some applications of these very methods may bring us to non-observed *possibilities* should perhaps not be too puzzling or epistemically extravagant.

But *how* may knowledge of mere truth allow us to obtain modal knowledge? There are two issues to be distinguished here. First, whether *possibility*-knowledge can be partially grounded on causal affection, and, second, whether *necessity*-knowledge can.

Following a bottom-up epistemology, to account for *possibility*-knowledge would involve spelling out what is underlying in the naïve starting point with which we started this section. When developing a positive solution, the most important tasks should be, first, to identify the non-observational methods employed (in order to extrapolate from what happened to Twin-Messy to what *can* happen to messy) and, second, to argue for the epistemic adequacy of the particular use of these methods in the modal case.

What about knowledge that something is necessary? If knowledge partially grounded on causal affection were sufficient for us to know *all* metaphysical possibilities, and also sufficient for us to know *that they are all*, then, given that some-

thing is necessary if and only if its negation is impossible, this would be sufficient for us to obtain knowledge, partially grounded on causal affection, that something is necessary. However, I am agnostic about the antecedent of that conditional, and, therefore, at a first approximation to the prospects of an empiricist modal epistemology, *necessity*-knowledge (to the extent that, if obtainable, should be inferentially obtained in the way illustrated) would not be the main concern.

Let us finish by being clear about the disagreement with modal rationalism. Modal rationalists may acknowledge that the naïve reasoning we started this section with is *a genuinely a posteriori way* of obtaining modal knowledge. However, essential to rationalism is the claim that *that* modal knowledge will *also* be achievable by *fundamentally a priori* means. In the case of conceivabilist accounts this is maximally clear. Even if we can come to know that it is possible for Kennedy to have been shot dead (by inferring it from its actual truth), *that*, the conceivabilist would say, is also knowable *a priori* (by inferring it from our conceiving it so); in other words, to arrive at that modal knowledge we did not need to know that Kennedy was actually shot dead. The same is true of Peacocke's account. Independently of whether we know the actual truth that Kennedy was shot dead, we, by reasoning from our implicit knowledge of the Principles of Possibility, could obtain fundamentally a priori the relevant modal knowledge. The rationalist's belief that a *fundamentally a priori* route to modal knowledge will always be available when an a posteriori route is is my main point of disagreement with them.

By being top-down, we know already how fragile such fundamentally a priori routes are. Since the rationalist do not offer satisfactory answers regarding the knowability conditions of essentialist principles, we can extend this explanatory deficit in a way that also discredits the epistemological story that they may offer to elucidate the knowability conditions of what Van Inwagen calls 'everyday life' modal knowledge. Consequently, and even if we have no guarantee that essentialist principles will be elucidated by empiricist means, an empiricist bottom-up epistemology is worth exploring (even strategically) because the mere fact that we could elucidate every-day life claims should count as a good comparative result with respect to top-down rationalists.

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