Phenomenalism, Intuition, and Metacognition

1 Introduction

Are we justified to believe our intuitions? Divisive debates about this question have been at the forefront of recent metaphilosophical literature, even shaping first-order philosophical discussions in epistemology, ethics, philosophy of mind, action, and language. A primary catalyst for this renewed attention to intuitions is a group of methodological innovations mooted by proponents of a novel school of thought dubbed 'experimental philosophy' (for recent collections: Sytsma and Buckwalter, 2016; Nado, 2016; Fischer and Collins, 2015). Experimental philosophers regard intuitions to be testable phenomena concerning how people respond to philosophically relevant scenarios (either actual or hypothetical). In this sense, they take experimental methods from the empirical sciences to provide valuable resources with which to improve our understanding of the nature and epistemology of intuitions.

Many experimental philosophers take their empirical findings to yield a negative answer to the above question: we are not justified to believe our intuitions. The following is a familiar and prominent argument which advances this idea:

Premise: Experimental studies have uncovered that people's intuitions can be swayed by epistemically otiose factors such as framing effects or order of presentation.

Conclusion: We should reject appeals to intuitions in philosophy.

Call this the **experimentalist challenge**. Variations of this challenge are endorsed by a number of recent experimental philosophers, such as Alexander and Weinberg (2007) and Swain, Alexander, and Weinberg (2008) – Horvath (2010) suggests something like this is the 'master argument' of experimental philosophy.

A number of defenders of intuition-based methodologies of philosophy reject the argument's premise. A prominent approach in this line of criticism points out that such experimental studies are inadequate insofar as they target the wrong phenomena. Disagreements here stem from divergences between experimentalists' conception of intuitions as 'responses to philosophically relevant scenarios' and competing accounts about the nature of intuitions. For instance, recent proponets of 'Phenomenalism' about intuition argue for a much more narrow conception of intuition, where these are a very particular class of episodes with a distinctive phenomenology. Specifically, Phenomenalists propose that intuitions have the phenomenology of *Presenting*:

Presenting : A mental state representing p has phenomenal qualities of presenting if it gives the *impression* as if p is true.

Given that experimental studies have not controlled for the phenomenology of Presenting, Phenomenalists argue that their empirical findings are unwarranted in drawing conclusions

about the epistemology of intuitions. Otherwise put, experimental philosophers' empirical findings are said to illicitly conflate facts about other mental states and genuine intuitions.

In this paper I argue that extant formulations of Phenomenalism are inadequate to defend the justificatory power of intuitions against the experimentalist challenge. For this aim, I first develop the central arguments for accounts of Phenomenalism, and explain how their proponents seek to defuse the experimentalist challenge (sec. 2). I then attend to recent developments from research on human metacognition (sec. 3), and argue that their findings have significant import to assess extant Phenomenalist accounts (sec. 4). In this light, I then show how extant accounts of Phenomenalism cannot guarantee that their preferred class of intuitions will not be skewed in ways similar to those uncovered in recent experimental studies (sec. 5).

2 Phenomenalism

In what follows, I expound how proponents of Phenomenalism argue for the idea that intuitions have the phenomenology of Presenting. I then show how proponents of Phenomenalism take their accounts to defuse the experimentalist challenge – i.e., the claim that empirical findings motivate at least some degree of scepticism about appeals to intuitions in philosophy.

2.1 Intuitions have phenomenology of presenting

Proponents of Phenomenalism appeal to cases which purport to elicit episodes of intuition in order to illustrate the phenomenal contours of intuitions, and to articulate the claim that they have phenomenology of presenting. For instance, Chudnoff (2013, p. 50) suggests that separately entertaining the following two propositions can elucidate how intuitions can have phenomenology of presenting:

1. Two non-concentric circles have at most two common points.

2. If a quadrilateral is inscribed in a circle, the sum of the products of the two pairs of opposite sides is equal to the product of the diagonals

Chudnoff (ibid., pp. 50-51) suggests that, for most people, entertaining the first proposition gives rise to an intuition that has presenting: by imagining two circles and manipulating this mental imagery, one comes to have the *impression* that the proposition is true (see Figure 2). By contrast, the second proposition does not prompt this type of episode; merely considering proposition 2 does not give rise to an impression as of its truth or falsity. This is not to say it is impossible to have a position about the valence of proposition 2 – however, an evaluation of its truth or falsity does not ensue from anything like the intuition prompted by considering proposition 1 (see Figure 1 above).

Bengson also makes use of the methodology of phenomenal contrast in order to delineate instances of intuitions. For instance, he appeals to the following illustrative example:

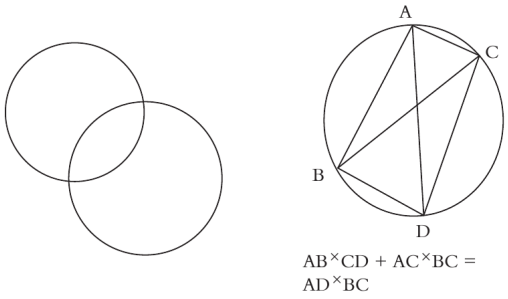

Figure 1:

> *Ramanujan's Intuition*: The mathematical prodigy Ramanujan is on his way to visit his mentor, Professor Hardy, in London. He hails a cab and, as it stops, he notices that its number is 1729. This causes him to smile, for he immediately sees that this number has a very interesting property, namely the property of being the smallest number expressible as the sum of two positive cubes in two different ways.

For most people, entertaining thoughts about the number 1729 will not elicit the intuition which Ramanujan is reported to have. That is, most of us do not immediately recognise 1729 as decomposing into two pairs of positive cubes – at least not in the same way most people would recognise that $2 + 2 = 4$. In this sense, Ramanujan's mental state is very distinctive and unlike our own: only he is instantly made aware that 1729 has such a particular mathematical property. Surely, I may perform calculations which lead me to think that '1729 is the smallest number expressed by two pairs of cubes' is true; but, thinking this is not identical to having Ramanujan's impression of its truth.

These descriptions purport to define intuitions as conscious episodes with a distinctive phenomenology, and which arise – or fail to arise – depending on specific circumstances. One important determinant of such episodes is that one **consciously entertain** a relevant proposition or scenario. In this sense, Chudnoff proposes that it is the conscious consideration of a proposition, and manipulation of the relevant mental imagery regarding properties of circles, which itself engenders an impression as if "Two non-concentric circles intersect in at most two points' is true'. Similarly, the anecdote about Ramanujan describes his experience as following his attending to the number 1729 on the taxi; it does not simply strike him that this is so, independent of any conscious awareness of this number.

However, this inherently conscious aspect of intuitions does not entail that agents consciously *form* intuitions. That is, intuitions do not arise as a result of *settling* on a particular position about its subject matter. Rather, they are **spontaneous** in that either one has or fails to have them. For instance, an intuition about the number of intersections between two non-concentric circles does not require one to explicitly entertain additional propositions about the mathematical properties of circles so as to assent on its truth. On a similar note, one does not conclude that 'if one's shoes are by the door, then they are not not by the door', by weighing considerations in favour or against the truth of this claim – it *merely* seems to one that this is so. As an additional

point, consider the Gettier intuition 'Smith does not know who will get the job'. It is implausible to hold that this intuition ensues as a result of conscious consideration of theoretical frameworks regarding the necessary and sufficient criteria for knowledge attributions.[1]

On a similar note, intuitions do not arise in response to an agent's decisions or choices about their subject-matter. That is, intuitions are not under an agent's conscious control, being instead essentially **non-voluntary**. For example, the intuition as if "Two non-concentric circles intersect in at most two points' is true' is not equivalent to one's conscious decision of the truth of that proposition. Rather, this intuition amounts to an impression as if it is true, which arises independent of an agent's reflective endorsement. The non-voluntariness of intuitions is further emphasised by cases of so-called cognitive illusions – instances where items of cognition operate in a way that systematically lead to wrong judgements. One often-referred case of cognitive illusions are occurrences of an intuition as if p, even when the agent reflectively endorses *not-p*. To illustrate, Phenomenalists usually appeal to the following mathematical axiom:

Naive Comp. For every condition ... x ... there is a set (x: ... x ...) circumscribing all and only those things that meet that condition.

Many people report to having an intuition as if this axiom was correct when they consider it, independent of their knowledge that it is false. So, even though they take the proposition Naive Comp. to be false, their intuition gives them an impression as if it was true. In this sense, the intuition arises independently of their decisions about the content matter, and can be thus characterised as non-voluntary.

Description of the conscious character, spontaneity, and non-voluntariness of intuitions are helpful to articulate the first central tenet of Phenomenalism. Recall this amounts to the claim that intuitions have phenomenology of presenting – i.e., they involve an impression as if their contents are true. As the examples above purport to show, this impression amounts to a 'sense of correctness' about the contents of cognition, ensuing from conscious consideration of a proposition or situation. Notably, this impression is importantly distinct from a *reflective endorsement* of the contents of cognition. As such, they do not amount to a deliberate act leading to the *conclusion* that content of cognition is accurate. That is, such impressions are spontaneous, arising regardless of a subject's deliberate judgements or decisions about the subject matter of their intuition. Second, the suggestion that intuitions give the impression as if its content is true means that this 'sense of accuracy' is irresponsive to, e.g., one's wishes, desires, and choices. Otherwise put, this impression of the truth is non-voluntary.

2.2 Against the experimentalist challenge

The conception of intuitions as episodes with the phenomenology of Presenting provides grounds for an anti-sceptical response to the experimentalist challenge. More specifically,

[1] For some compelling work objecting to these suggestions, see (Brown, 2013; Nagel, 2012).

these accounts support an argument against its single premise. To elucidate this anti-sceptical response, it is first helpful to highlight a fundamental assumption underlying much of current experimental philosophy: the idea that intuitions are testable phenomena concerning how people (both philosophers and non-philosophers) respond when presented with actual or hypothetical philosophically relevant cases. In this sense, experimentalists define intuitions as a particular type of judgement which can be elicited through methods from the empirical sciences.

Many philosophers disagree with this approach to elicit people's intuitions. Disagreements here stem from divergences between this approach and proposals about the nature of intuitions. These proposals range from more "thin" conceptions, which characterise intuitions as a group of less specific and ordinary capacities for judgements, to more "thick" conceptions, defining intuitions as a narrow set of phenomena with particular phenomenologies and/or etiologies – I borrow this terminology from Weinberg and Alexander, 2014.

Phenomenalists articulate one such thick conception of intuitions. As pointed out above, proponents of this view define 'intuitions' as episodes with a particular phenomenology of 'presenting', thus narrowing the reference of the term to episodes with these distinctive features. Furthermore, many proponents of thick conceptions of intuitions have raised doubts about experimentalist accounts of intuitions. Specifically, they suggest that experimental studies motivating such accounts are inadequate insofar as their experimental designs obscure important distinctions between genuine intuitions and other mental states. As such, empirical findings from such studies capture facts about a large number of evidential sources, conflating them with the genuine intuitional episodes at stake in the debate. For instance, Bengson argues against experimentalist attacks on the epistemological validity of intuitions:

> [T]hese attacks neglect a considerable gap between the answers elicited by the relevant empirical studies and the intuitions about which naysayers naysay. It cannot innocently be assumed that subjects' answers expressed how things struck them – what intuitions they had, if any. The point is simple, but not insignificant. For, I will argue, it implies that we are at the present time unwarranted in drawing any negative conclusions about intuitions from the relevant empirical studies.

Bengson endorses a phenomenalist account of the nature of intuitions – i.e., the correct account of how *strike one* involves appeals to the phenomenology of presenting (see 2.1). Bengson raises the possibility that participants are not answering in terms of how things 'strike them', and that their judgments are thus not genuine intuitions (intuitions with the phenomenology presenting). Similarly, Chudnoff (2013, p. 111) endorses this proposal:

> In general experimental philosophers have not controlled for the kind of judgments made in surveys. So they have not controlled for etiology, content, phenomenology, or even the minimal condition of their subjects expressing how matters strike them rather than a response arrived at in some other way,

> such as blind guessing or reasoning about what it is appropriate to say in the circumstances.

Like Bengson, Chudnoff also endorses a Phenomenalist account, whereby genuine intuitions have the phenomenology of presenting. Similarly, he takes this qualification to raise issues with the experimental challenge, which he suggests should control for intuitions with the phenomenology of presenting. Thus, experimental philosophers need to take on the task of factoring out contributions from other evidential sources, which create noise in their experimental results (Chudnoff, 2013, p. 113).

It is important to note that such an anti-sceptical strategy does not amount to an overall rejection of experimental philosophy. Rather, it merely raises issues with how experimental studies have been currently been conducted. Indeed, most proponents of this anti-sceptical strategy accept that if such studies actually do control for the adequate phenomenology or etiology, then their findings are legitimate to draw conclusions about the nature and epistemology of intuitions. Moreover, most proponents of thick conceptions accept that if these findings reveal that intuitions falling under such thick conceptions are problematically influenced by epistemically otiose factors, then we should be sceptical about believing them. This is articulated by extant Phenomenalist proposals in their acceptance that intuitions provide *defeasible* justification. This feature of such accounts makes room for contributions of empirically informed accounts of intuitions for reassessments of the epistemology of intuitions with presenting. In this sense, Phenomenalism is compatible with experimental philosophy, albeit providing grounds for the anti-sceptical response expounded above.

3 Metacognition and metacognitive experiences

Imagine someone asks you 'who wrote *A Clockwork Orange*?'. You stop for a moment and try to recall. You are sure that you know it, but the name just escapes you now. Or suppose you are given a piece of paper with some maths problems. You look at the first one and evaluate whether you can solve it. You give up as soon as you look at the many unrecognised complicated symbols. The next one looks simple to you, so you attempt to answer it. You then have the impression as if you've got it wrong, although you can't say precisely what that is. Common to all these events are operations of human capacities for metacognition: the set of capacities that allow for representation and monitoring of one's own cognition.[2]

Identification of capacities underwriting human metacognition has motivated many divisive debates across a variety of disciplines. Originally, the term 'metacognition' was coined to refer to a set of capacities for 'thinking about one's own thinking', or for 'cognising about cognitive phenomena' (Flavell, 1979). Accordingly, most early research on the workings of metacognition focussed on abilities for *deliberate* reflection on one's own mental states. However, recent developments in experimental and cognitive psychology challenge the original formulation of 'metacognition' and the narrow approach

[2] I borrow this definition from Joelle Proust (2013).

focussing on such a limited set of abilities. Their empirical findings, stemming from a wide body of work on human and animal cognition, suggest that metacognition comprises a much broader set of cognitive capacities – many of which do not involve any degree of reflection or reasoning about mental states. The currently dominant experience-based model of metacognition reflects this proposal, and advances that phenomenal experiences *concerning* a subject's own mental capacities, processes, and dispositions, constitute genuine cases of metacognition (for reviews: Koriat, 2007; ch. 5 Proust, 2013).

Building on this experience-based model of metacognition, philosophers and psychologists have recently turned to the extensive literature on metacognitive experiences. The latter encompasses a group of phenomenal experiences – documented in the psychological literature – which are *about* cognition and are poised to influence human decision-making and judgement (Muñoz, 2014; Arango-Muñoz and Michaelian, 2014). For instance, one well-documented type of metacognitive experience is the so-called *feeling of knowing*. This can be described as the subjective experience as if one is capable to retrieve some given piece of information if they deployed more cognitive effort to do so. Common manifestations are experienced when one has the impression that one knows a person's name, although they cannot remember it now; or, alternatively, the sense that one would be able to recall the answer to a trivia question if one tried harder (Metcalfe, 1986).

Motivating the attention to these experiential states is the proposal that, plausibly, metacognitive experiences are underwritten by precisely those capacities enabling metacognition (Arango-Muñoz and Michaelian, 2014). To illustrate, consider how instances of feeling of knowing require that a cognitive agent be able to direct their attention to, and represent features of, their own cognition – e.g., that recall of the trivia answer is imminent – and furthermore, evaluate whether further effort will be productive – 'I'm sure I'll remember if I keep trying'. Likewise, other metacognitive experiences also seem to rest on the exercise of such capacities, taken as constitutive of metacognition. Thus, many philosophers and psychologists propose that investigation into the mechanisms producing metacognitive experiences may shed light on the nature of those capacities enabling human metacognition.

Indeed, a central development in studies on metacognition stems from research on the nature of metacognitive experiences. This research build on a large body of work on human memory (Dunlosky and Bjork, 2008; Koriat, 2007; Schwartz, 1994) and text comprehension (Baker and Brown, 1984; Glenberg and Epstein, 1985; Rawson and Dunlosky, 2002), whose experimental findings establish a distinction between two classes of cognitive processes: those for retrieving information, and those for evaluating the accuracy of the information retrieved. More specifically, the suggestion is that the evaluative processes of information retrieval do not depend directly on the contents of information, but rather on the *way* through which that information was obtained. That is, assessments of the (in)accuracy of information retrieval is sensitive to features such as the *familiarity* of certain processes, or the *amount of ancillary information* brought to mind during the retrieval attempt.

Subsequent investigations in cognitive psychology have adopted similar experimental designs. In this way, they attempt to assess the import of these findings for other domains of cognition – such as problem solving (Metcalfe, 1986; Metcalfe and Wiebe, 1987), rea-

soning, and decision-making (Simmons and Nelson, 2006; Thompson, 2009; Thompson, Turner, and Pennycook, 2011; Thompson, Turner, and Pennycook, 2013). This approach has proven fruitful for research on the cognitive underpinnings of metacognitive experiences. Notably, their findings support conclusions very similar to those drawn in the literature on metamemory and text comprehension: viz., the mechanisms giving rise to metacognitive experiences are not sensitive to the specific *contents* of cognition. Instead, they are responsive to the cognitive agent's sensitivity to *cues* about their *ongoing* mental processes. Otherwise put, metacognitive experiences concern features of processing, not features of content.

One very productive line of enquiry into the nature of metacognitive experiences regard findings on so-called 'cognitive fluency'. Cognitive fluency refers to the subjective measure of effort deployed in cognitive processing (for reviews: Alter and Oppenheimer, 2009; Unkelbach and Greifeneder, 2013b).[3] To note, all cognitive operations for storing, retrieving, generating, and processing information can be described along a scale from more to less cognitively demanding. For instance, some sentences are more complex to parse than others (compare *It is cold outside* versus *Cold it is outside*); some non-word strings are easier to pronounce (*Barnings* versus *Yoalumnix*); and some objects are easier to perceive than others (words in yellow font on a green background versus reading black font on white background). Similarly, some cognitive tasks are agonizingly demanding (calculating one's tax returns), whereas others are much less so (simple one digit algebraic calculations).

Sensitivity to cognitive fluency (and disfluency) is mostly experienced in the ways delineated above: i.e., as direct experiences of the degree of effort deployed for a given cognitive task. For instance, we generally are aware that calculating one's tax returns feels strenuous, or that single digit algebra feels easy. However, sensitivity to fluency does not necessarily lead to such types of experiences. Delicate empirical enquiry into (dis)fluency in cognition have deployed a number of techniques to manipulate participants' sensitivity to fluency of processing in experimental settings to document the scope of its effects on cognition. Crucially, findings from this line of enquiry provide a large and substantial body of evidence suggesting that sensitivities to *fluency* are a determinant for the production of a diversity of metacognitive experiences. (For the remainder of this paper, I restrict my focus to a particular class of metacognitive experiences: viz., those produced by sensitivities to cues of fluency. In line with this focus, I will make use of the unrestricted term 'metacognitive experiences' in this sense). For instance, in a famous study, Alter et al., 2007 gave two groups of participants the task of solving logic problems, where one group was given the instructions in an easily readable, traditional font, whereas the other group read instructions in non-traditional letter-like symbols. This study, alongside many others, indicate that people feel considerably *less* confident about their judgements when there is felt orthographical disfluency (Kelley and Lindsay, 1993; Simmons and Nelson, 2006).[4] Similarly, other experimental studies suggest fluency

[3] Researchers on fluency trace subtle distinctions with regards to types of fluency that agents are sensitive to in cognition – e.g., *answer* fluency, *processing* fluency, and *retrieval* fluency (). For current purposes, I will ignore these distinctions, as they do not prove to be relevant here. As such, I make use of the roughly carved term 'fluency' to refer to any one of such types. But, this should not be taken to indicate that I defend a unitary account of 'fluency' in human cognition

[4] There is a very extensive literature seeking to explain how sensitivities to fluency get 'interpreted'

is a determinant for the production of the feeling of knowing () and the feeling of error ().

Crucial for current purposes, one particular set of studies in this field of research suggests that fluency underwrites instances of the so-called feeling of rightness (henceforth FOR) (Thompson, Turner, and Pennycook, 2011; Thompson, Turner, and Pennycook, 2013). The latter is a metacognitive experience postulated in the literature in cognitive psychology to describe experiences rendering a 'sense of correctness' following the completion of an experimental task. FORs are thus described as experiential states as of the accuracy of the contents of cognition, which arise irrespective of an agent's reflective endorsement of those contents. Developments from research on the FOR will prove informative in what follows. More specifically, I argue that elaboration on details of their experimental studies and findings (see sec. 4 below) provide valuable resources with which to assess the Phenomenalist thesis.

4 Phenomenalism and Metacognition

In the previous section, I alluded to findings on FORs – a class of metacognitive experiences which render a 'sense of accuracy' about the contents of cognition. Notably, this definition of FORs bears superficial similarities to the definition of intuitions as Presenting: both describe states that yield an impression as if their contents are objectively true. In what follows, I flesh out these superficial similarities in order to argue that intuitions can be reduced to states with FOR. That is, I defend the following claim:

Reduction Intuitions with phenomenology of presenting *are* states with FORs.

To articulate this claim, it is helpful to see how a cross-examination of experimental work from research on FORs and arguments delineated for Phenomenalism reveals *deep commonalities* between intuitions and states with high-degrees of FOR: many of the important features described as distinctive to episodes intuitions with phenomenology of presenting are shared by mental states with FORs.

Investigations on the workings of FORs seek to identify the particular conditions that engender (or fail to engender) this metacognitive experience (Simmons and Nelson, 2006; Thompson, Turner, and Pennycook, 2011; Thompson, Turner, and Pennycook, 2013). To proceed in this investigation, these studies make use of experimental designs which ask participants to perform a variety of different reasoning tasks. For each task, participants are required to read a statement (or pair of statements) and then evaluate a series of propositions about them. For instance, one set of such experiments presented participants with statements of the form "If P then Q" and then asked them to assess the validity of one of four inferences from those initial statements: Modus Ponens (MP), Modus Tollens (MT), Affirming the Consequent (AC), or Denying the Antecedent (DA). The following is one such reasoning task:

into metacognitive experiences (see, e.g., Muñoz, 2014; Unkelbach and Greifeneder, 2013a; Fiedler, 2013). Full review of their findings is outside of the scope of this paper; however, they do provide interesting supporting evidence for the views advanced here

Initial Statement: *If a car runs out of gas, it will stall.*
The car has run out of gas. Therefore it has stalled. (MP)
The car has not stalled. Therefore, it has not run out of gas. (MT)
The car has stalled. Therefore, it has run out of gas. (AC)
The car has not run out of gas. Therefore, it will not stall. (DA)

For each such reasoning task, a time-limited, forced-choice response paradigm was adopted. For these experiments, participants were asked to first consider the reasoning task and to then report the answer that first came to mind – being constantly reminded of the need to keep response times at a minimal. Immediately after, participants were asked to report their degree of confidence about that first answer produced – which they indicated on a Likert Scale ranging from (1) to (7), being (1) a 'guess' and (7) 'certainty'.

The choice of this time-limited, forced choice experimental design is motivated by findings from a body of work from cognitive psychology. Findings from this body of work suggest that time limited, forced-choice experimental tasks prompt participants to report those answers which they have the 'impression' of being accurate. Put differently, this body of work suggests that enforcing time constraints on forced-choice task completion prompts cognitive agents to *respond experimental questions on the basis of their experiential states*. As such, this experimental design generally records answers to which participants attribute the highest degree of subjective accuracy, irrespective of whether they ultimately endorse this response (Evans and Curtis-Holmes, 2005; Tsujii and Watanabe, 2010; Finucane et al., 2000). Relatedly, these quick response tasks have been shown to suffer less interference from other cognitive processes of deliberate reflection (Neys, 2006), and even display less neural activations from areas associated with belief inhibition (Tsujii and Watanabe, 2010).

The choice of this experimental design is thus considered adequate for the purposes of investigating FORs. Recall that these are experiential states accompanying answer production to an experimental task. As such, enquiry into the nature of such experiential states requires experimental designs poised to capture such states. The experimental design just described seem apt: they purport to elicit states that give an impression as if the contents of cognition are objectively true, which ensues from **conscious engagement** with their subject matter, are **spontaneous**, and **non-voluntary**. To begin elucidating this claim, notice first how experiments investigating FORs involved experiments where participants were asked to consider a variety of reasoning tasks, for which they then recorded their immediate answers. In this way, such experiments elicit states which follow from cognitive engagement with the subject-matter of which they are about. Otherwise put, states with FOR about a certain content of cognition arise in response to entertaining propositions or situations regarding that cognitive representation.

Second, states recorded in this experimental design were spontaneous, in the sense that they were not *consciously formed*. To support this claim, it is noteworthy that the experimental design effectively hampered this possibility: by adopting time limits for issuing responses to reasoning tasks, participants' reflective engagement with the reasoning task was drastically restricted.[5] Again, this claim is further supported by

[5] In fact, experimenters even discarded those answers from participants who took (comparatively) too long to answer.

previous empirical findings indicating that time pressures prompt participants to report those answers to which their experiential states attribute high degrees of accuracy, irrespective of whether the agent reflectively endorses that answer. As such, these experiments give rise to mental states of answer endorsement, even though this does not rest on explicit and conscious consultation of the background knowledge on the subject matter. Thus, we can conclude that answers collected in this experimental phase were not the result of conscious cognitive processing, and as such, are **spontaneous**.

Third, states of answer retrieval in these initial experimental phases were **non-voluntary**. For, those experiential states attributing degrees of confidence to answer retrieval were not influenced by participants' conscious choices regarding the content of the experimental task. Indeed, experimental findings from the body of research on FORs show that high levels of FOR can nonetheless result in inconsistencies between answers recorded in the time-limited answer tasks, and participants' reflective judgement on the experimental task. That is, although certain states can lead to impressions of high-levels of subjective accuracy about a particular answer, further reflection on that task can lead to reconsideration of that answer. Notably, this is very similar to cases of cognitive illusions, indicated by Phenomenalists as essential to characterise intuitive episodes. Given these similarities, it is safe to assume that answer retrieval under time-pressures give rise to **non-voluntary** states.

Lastly, episodes of answer production elicited in this first experimental tasks are *actually* accompanied by a sense of correctness about their contents. This is not a trivial claim; to explain, recall that these experiments asked participants to indicate their degree of confidence about the answer produced in this phase, indicating this on a Likert scale. However, unaided of any additional considerations for the validity of this experimental design, it can be argued that reports of subjective confidence *following* answer production are in second-order experiences about the answer produced. That is, it is plausible to argue that this sense of correctness about the contents of cognition do not accompany answer production, but follow from it. However, there are sufficient reasons to reject this: given these experiments enforced a time-limited, forced-choice task, plausibly, reports of sense of accuracy are not mere post-rationalizations. For, as explained above, this experimental design prompts reports of answers to which participants attribute a subjective sense of correctness – i.e., answers accompanying a high degree of subjective confidence. In this sense, it is plausible to assume that the confidence reports from the experiments are at least correlated with the impressions that motivated answer reports in that task.

In the light of the delineations above, I suggest it is plausible to assume that intuitions with phenomenology presenting *are* states with FOR. For, both are states which require conscious engagement with a cognitive task, are spontaneous, non-voluntary, and both have a phenomenology that renders a 'sense of accuracy' about an answer produced to a cognitive task. Of course, the delineations above do not by themselves suffice to ultimately establish this identity. This proposal is merely tentative, relying on no more than a cross-examination from the relevant literature. Of course, a definitive claim for this identity requires empirical research aimed at investigating this hypothesis. In the last section I return to these considerations and suggest further (empirical) research

with which to establish the claims advanced in this section. However, in the following section I assume **Reduction** in order to tease out its implications for the idea that Phenomenalists can avoid all variants of the experimentalist challenge.

5 Phenomenalism and Experimental Results

Recall the Phenomenalist's suggestion that experimental studies motivating the experimentalist challenge are inadequate, insofar as they do not target the right phenomena. This amounts to the proposal that extant experimental studies obscure important distinctions between sources of evidence and, as such, make illicit inferences about the epistemological value of intuitions with phenomenology of presenting. In this section, I argue that this argument fails.

The proposal I advance is that Phenomenalists' appeal to their thick conception of intuitions are inadequate to defuse the experimentalist challenge in its entirety. A closer look at the experimental findings from the literature on fluency and from experimental philosophy will help to articulate this point. More precisely, a very brief survey of these findings reveals similar patterns of distorting effects affecting both intuitions and judgments based on metacognitive experiences. Given **Reduction**, I argue we have reasons to believe that *intuitions with presenting* are prone to be problematically skewed in ways resembling those suggested in experimental philosophy.

The most prominent strand of experimental philosophy makes use of surveys in order to elicit philosophically relevant intuitions, and seeks to identify whether these are sensitive to certain parameters. For instance, a number of such studies propose that *situational* or *contextual* factors, such as whether one considers an abstract or concrete thought experiment (Nichols and Knobe, 2007; Weigel, 2011), or whether one is primed with contextually relevant stimuli (Swain, Alexander, and Weinberg, 2008; Tobia, Buckwalter, and Stich, 2012), can ultimately sway people's intuitions. Likewise, other studies suggest that intuitions are sensitive to *demographic* factors. For instance, some such studies point out significant variation in the intuitions philosophers consider widespread, and the intuitions people actually have (Nahmias et al., 2006), or between the intuitions of people who have very distinct personality traits (Feltz and Cokely, 2012; Schultz, Cokely, and Feltz, 2011).

Similar findings have been uncovered in studies within experimental and cognitive psychology investigating judgments based on metacognitive experiences. Importantly, the patterns of variation in such judgments model very closely those suggested to influence intuitions in studies from experimental philosophy. For instance, *situational* or *contextual* factors, such as whether participants are presented with abstract or concrete cases (Tsai and Thomas, 2011), or whether experimental subjects are primed with contextually relevant stimuli (Kelley and Lindsay, 1993; McGlone and Tofighbakhsh, 2000), ultimately influence on participants' responses to experimental tasks. Furthermore, like findings from experimental philosophy, *demographic* factors have also been found to ultimately skew judgments based on metacognitive experiences. For instance, personality traits – such as whether a subject is prone to adopt low-risk, preventive focussed, or moderate-

risk, motivationally focussed problem-solving strategies – have been shown to influence subjects' metacognitive experiences in certain task settings (**higgins05**; Molden and Higgins, 2008). These studies indicate that whether a task fits a subject's dispositions can ultimately determine which claims she finds compelling, and what she is disposed to accept as true. A second demographic factor found to affect metacognitive experiences is that people from a group are likely to wrongly estimate the popularity of certain views, particularly when these are familiar to them (Weaver et al., 2007). Notably, this pattern of overestimating certain views closely resembles the effect of philosophers' misattribution of certain intuitions to the wider public.

Crucially, for all these patterns of sensitivity in judgments based on metacognitive experiences, it has been suggested that variation in such judgement can be attributed to changes in the degrees of processing fluency. That is, participants' responses to experimental tasks strongly correlated to predictions about which responses would be cognitively fluent. This pattern is explained in the light of the wide body of research on the cognitive underpinnings of metacognitive experiences, which indicate that fluency is a determinant of such experiences (see sec. 3 above). Otherwise put, this indicates that variation in judgments based on metacognitive experiences are ultimately triggered by variation in cognitive fluency. Attribution of these patterns of sensitivity to cognitive fluency has significant import for evaluating the Phenomenalists' proposal that their thick conception of intuitions has anti-sceptical force. This finding suggests that intuitions with presenting are likely to be swayed by precisely these patterns of variation. To elucidate, recall that **Reduction** is the proposal that intuitions with presenting are states with FOR. But, if states with FOR are underwritten by cognitive fluency (see sec. 2 above), then intuitions with presenting have similar cognitive underpinnings – viz., intuitions with presenting are also underwritten by fluency. The implication of this suggestion is that intuitions with presenting are likely to be sensitive to similar patterns of variation as those found in studies in experimental philosophy. More precisely, like the many intuitions tested in studies from experimental philosophy, intuitions with presenting are prone to be swayed by – epistemically irrelevant – *contextual* and *demographic* factors. This contradicts the Phenomenalist's proposal that findings from experimental philosophy are inadequate to predict problematic variations in intuitions with presenting. In light of the delineations here, I suggest this is unlikely to be true.

6 Conclusion

In this paper I have argued that Phenomenalism is inadequate to dispel the worries raised by recent studies in experimental philosophy. To articulate this claim, I made use of findings from an extensive body of work on metacognition, which I propose have substantial import for assessment of the Phenomenalist thesis. More specifically, these findings provide valuable resources with which to gain better understanding of the nature of intuitions, insofar as they shed light on the cognitive underpinnings of their phenomenology. This suggests that distorting effects affecting experiences of fluency will also skew judgments based on intuitions with presenting.

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