

Knowing What It's Like

* Forthcoming, *Philosophical Perspectives*

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Abstract

This paper argues that knowledge of what it's like varies along a spectrum from more exact to more approximate, and that phenomenal concepts vary along a spectrum in how precisely they characterize what it's like to undergo their target experiences. This degreed picture contrasts with the standard all-or-nothing picture, where phenomenal concepts and phenomenal knowledge lack any such degreed structure. I motivate the degreed picture by appeal to (1) limits in epistemic abilities such as recognition, imagination, and inference, and (2) the semantics of 'knows what it's like' expressions. I argue that approximate phenomenal knowledge cannot be explained merely via determinable or vague phenomenal concepts. I develop a framework for systematizing approximate knowledge of phenomenal character. And I explain how my view challenges some standard assumptions about the acquisition conditions, requirements for mastery, and referential mechanisms of phenomenal concepts.

Introduction

Consider what it's like to see red, feel pain, or smell cinnamon. Then consider what it's like to undergo the echolocation experiences of bats, the proprioceptive experiences of octopuses, or the electromagnetic experiences of aliens. There's an obvious asymmetry between your ability to think about the former experiences vs. your ability to think about the latter experiences. What explains the asymmetry?

The standard explanation is that the difference is a matter of whether or not you possess phenomenal concepts for the relevant experiences. You know what it's like to feel pain, see red, and smell cinnamon because you have phenomenal concepts for those experiences. But you don't know what it's like to echolocate, to move your seventh tentacle spirally, or to sense a

polarized magnetic field because you lack phenomenal concepts for those experiences.

This paper argues that the aforementioned asymmetry is a difference in degree, rather than a difference in kind. I argue that (1) knowledge of what it's like varies along a spectrum from the more approximate to the more exact, and that (2) phenomenal concepts vary along a spectrum in how precisely they characterize what it's like to undergo their target experiences. The goal of this paper is to develop, motivate, defend, and explore the consequences of this degreed picture of phenomenal concepts and phenomenal knowledge.

§1 explains the degreed picture and contrasts it with the standard all-or-nothing picture; §2 motivates the degreed picture by appeal to limits in epistemic abilities such as recognition, imagination, and inference; §3 motivates the degreed picture by appeal to the semantics of 'knows what it's like' expressions; §4 argues that inexact knowledge of what it's like cannot be explained merely in terms of determinable or vague phenomenal concepts; §5 develops a framework for characterizing the degreed structure of inexact phenomenal knowledge; and §6 explains the consequences of the degreed picture for questions about the acquisition conditions, requirements for mastery, and referential mechanisms of phenomenal concepts.

§1 The Degreed Picture

I'll start with some definitions and background. Then I'll contrast the degreed picture with the all-or-nothing picture.

Definitions and Background

A *phenomenal concept* is a concept of an experience that enables one to think about what it's like to have that experience (or, synonymously, about the phenomenal character of that experience). If you think about what it's like to

see red, feel pain, or smell cinnamon, then you're deploying phenomenal concepts.¹

A terminological note: I'll follow the standard convention of using expressions of the form 'what it's like to experience x ' *de re* rather than *de dicto*. For example, I'll use the expression 'what it's like to see red' to denote the kind of experience normal humans in fact have when seeing red objects under normal conditions (rather than any experience that is a perception of a red object). On this way of talking, a subject might know what it's like to see red even if they have never actually perceived any red objects (perhaps they have hallucinated red, or perhaps their red experiences are normally caused by green objects).

Sometimes phenomenal concepts are defined as concepts that satisfy the *experience requirement*: that to possess a phenomenal concept, one must have undergone the experience denoted by that concept. However, this way of defining 'phenomenal concept' closes off some substantive theoretical questions. A number of philosophers have argued that one can know what it's like to have an experience even if one has never had that experience. And Swampperson—a being who has just spontaneously materialized into existence and is an internal duplicate of you—arguably possesses phenomenal concepts, despite not having had the relevant experiences.² A better approach is to define phenomenal concepts via their central epistemological role: namely, as concepts of experiences that enable one to think about what it's like to have those experiences. The experience requirement can then be

¹ Note that a phenomenal concept must not only refer to an experience x , but must also enable one to think about what it's like to undergo x . The concept MY FAVORITE MENTAL STATE might happen to refer to an experience, but that doesn't make it a phenomenal concept.

² See Mellor [1993: 6], Lewis [1998/2004: 78], Noordhof [2003], and Alter [2008: 254]. If one builds the experience requirement into the definition of 'phenomenal concept', then one could interpret some of these authors as claiming that one can have phenomenal knowledge even without possessing the corresponding phenomenal concepts. But a more natural interpretation is to take these authors to be arguing against the experience requirement. And some—such as Alter—explicitly leave open the experience requirement in their definition of 'phenomenal concept'.

understood as a hypothesis about what is needed to satisfy that role. Towards the end of the paper, I'll argue that the experience requirement is false.

Let's say the *target experience* of a phenomenal concept is the experience that the phenomenal concept refers to. Note that saying that x is the target experience of A is stronger than merely saying that x is within the extension of A . For example, scarlet experience is in the extension of RED EXPERIENCE, but RED EXPERIENCE isn't a concept of scarlet experience (it's a concept of red experience). I'll use the term 'target experience' in a way that's neutral between denoting phenomenal properties (such as redness) vs. denoting particular experiences (such as a particular experience of red), and I'll take target experiences to be wholly individuated by their phenomenal characters. To simplify the language, I'll often omit terms like 'phenomenal' and 'experience' when talking about concepts, properties, and experiences.

I'll assume that concepts are *mental representations*. More specifically, I'll assume that concepts are individuated by their psychological roles, are the constituents of thoughts, and enable epistemic abilities such as recognition, imagination, and inference. This way of thinking about concepts is standard in cognitive science and common amongst philosophers thinking about phenomenal concepts.³ Under this framework, we can distinguish between concepts (mental representations that are constituents of thoughts), senses (abstract entities that are the meanings of concepts), and referents (the properties or particulars picked out by concepts).⁴ The main alternative framework construes concepts as *abstract entities*: in particular, as senses

³ As examples, Chalmers [2003: 4] takes "concepts to be mental entities [that] are constituents of beliefs...analogous to the way in which words are constituents of sentences," Tye [2011: 302] assumes that "concepts are mental representations deployed in thought, belief, and knowledge," and Balog [2012: 9] says that "concepts are mental representations that are...words of Mentalese."

⁴ Some might wonder whether I'm using the term 'concept' to mean what other philosophers sometimes mean by 'conception'. Well, a *conception* is standardly defined as the set of beliefs associated with a concept. By contrast, I take concepts to be mental representations that are constituents of beliefs.

(rather than mental representations) that constitute propositions (rather than beliefs). Though I'll speak in the language of the mental representation framework, those who prefer the abstract entity framework can translate my talk of concepts into talk of the mental representations used to grasp concepts.⁵

What exactly is the relationship between phenomenal concepts and phenomenal knowledge? ⁶ Most think of possession of phenomenal knowledge as requiring possession of phenomenal concepts. I favor the stronger view that phenomenal knowledge is constituted by, rather than merely acquirable from, phenomenal concepts.⁷ However, my arguments are compatible (given some terminological substitutions) with views that instead hold that there's merely a causal (rather than constitutive) relationship between phenomenal concepts and phenomenal knowledge. As a neutral expression, I'll talk of phenomenal concepts *yielding* phenomenal knowledge, by which I mean possession of the phenomenal concept puts one in a position to acquire knowledge of what it's like to undergo the target experience.

Degrees vs. All-or-Nothing

According to what I'll call the *degreed picture*, phenomenal concepts vary with respect to *degrees of purity*. The term 'degree of purity' denotes a theoretical role: what it is for a phenomenal concept to have a higher degree of purity is for it to more precisely characterize what it's like to undergo its target experience. Equivalently, in my view, phenomenal concepts with higher degrees of purity are those that yield more exact (as opposed to approximate)

⁵ See Margolis & Laurence [2007] for discussion of these frameworks. There's also the view that concepts *are* epistemic abilities (rather than mental representations that enable epistemic abilities). My arguments will apply even more straightforwardly to this view.

⁶ I use the expressions 'phenomenal knowledge' and 'knowledge of what it's like' synonymously.

⁷ This is distinct from the idea that there exists knowledge by acquaintance. In my view, mere acquaintance with an experience doesn't suffice for any kind of knowledge, and one can have knowledge of what it's like even for experiences one has never had (a point I argue for in §6).

knowledge of what it's like to undergo its target experience.⁸ On the degreed picture, for any experience x , there are many phenomenal concepts of x that yield knowledge (at differing degrees of exactness) of what it's like to undergo x . I'll say more in §2, §3, and §4 to characterize degrees of purity, and in §5 I'll develop a framework for systematizing degrees of purity.⁹

By contrast, according to the standard *all-or-nothing picture*, there's no such thing as degrees of purity. Instead, the all-or-nothing picture holds that if one possesses a phenomenal concept of an experience x , then one thereby knows (or is in a position to know) what x is like. If one doesn't know what x is like, then one must possess a phenomenal concept of a different experience (or no phenomenal concept at all). The fundamental disagreement between the degreed picture and the all-or-nothing picture is whether the dimension of variation posited by the degreed picture— 'purity' —is needed to capture the epistemic structure of phenomenal concepts and phenomenal knowledge. The degreed picture thus postulates a richer structure for the space of phenomenal concepts than the all-or-nothing picture.¹⁰

Two clarifications. First, the dispute between the degreed picture and the all-or-nothing picture isn't merely a matter of whether phenomenal

⁸ My term 'purity' relates to the common distinction (introduced in Chalmers [2003]) between 'pure phenomenal concepts' (which refer to experiences directly via phenomenal character) and 'impure phenomenal concepts' (which refer via other means). However, under the degreed picture, (1) purity is a matter of degree, (2) phenomenal concepts with zero purity are distinct from non-phenomenal concepts of experiences (see §5), and (3) no phenomenal concepts refer directly via their phenomenal character (see §6).

⁹ Would analogous arguments show that non-phenomenal concepts likewise vary in how precisely they characterize their referents? I'm sympathetic to such a generalization, but I'll focus only on phenomenal concepts. The all-or-nothing picture is especially prominent in the phenomenal concepts/knowledge literature, and the degreed picture will challenge a number of standard assumptions in that literature.

¹⁰ A degreed theorist could also individuate phenomenal concepts more coarsely, so that identity of phenomenal concepts persists across variations in purity. I have no problem with such an approach. But for present purposes, I'll assume a fine-grained way of individuating concepts, where differences in purity thereby entail differences in phenomenal concepts.

concepts vary with respect to determinability (for example, RED EXPERIENCE is a determinable of SCARLET EXPERIENCE). Both the degreed theorist and the all-or-nothing theorist accept that there are determinable phenomenal concepts. The question is whether there's a further dimension of variation (corresponding to what I've called 'purity') that plays the theoretical roles identified by the degreed theorist (a point I'll discuss more in §4 and §5). Second, the degreed theorist doesn't hold that one can *possess* phenomenal concepts to greater or less degrees. Both the degreed theorist and the all-or-nothing theorist can accept that for any subject S and phenomenal concept A, either S possesses A or not. Instead, the degrees concern how precisely a phenomenal concept characterizes what it's like to have its target experience, and the degree of exactness of the phenomenal knowledge yielded by those concepts.

Why think that the all-or-nothing picture is standard? A first source of evidence is that most discussions of phenomenal concepts merely distinguish phenomenal concepts from non-phenomenal concepts of experiences, with the implicit implication that there are no further important distinctions to be made within the class of phenomenal concepts and with no mention of the idea that phenomenal concepts exhibit the kind of degreed structure that I'll describe. In fact, there's nearly no discussion of inexactness or degrees in the literature on phenomenal concepts/knowledge. A notable exception is Cath [2019, 2022], who defends a view similar to the one I'll develop, but who focuses mainly on issues about testimonial knowledge and transformative experience. My view aligns well with Cath's view, though my aim in this paper is to develop a more general version of the degreed picture.¹¹

¹¹ A good deal of the phenomenal concepts/knowledge literature focuses on what makes phenomenal concepts/knowledge distinct from other kinds of concepts/knowledge and how that distinctness bears on the mind-body problem. For a limited sample of work on these issues, see Loar [1990], Sturgeon [1994], Hill [1997], Hill & McLaughlin [1998], Balog [1999], Perry [2001], Papineau [2002], Chalmers [2003], Levin [2006], Sundström [2011], and McLaughlin [2012]. For general overview, see Balog [2009], Nida-Rümelin & O'Connell [2019], and the papers in Alter & Walter [2006]. For discussion of inexact knowledge, see Williamson [1992].

A second source of evidence is that philosophers sometimes explicitly state that phenomenal concepts yield exact knowledge of what it's like. For example, Chalmers [2003] says that when "Mary believes roses cause [red] experiences, or I am currently having [a red] experience, she thereby excludes all epistemic possibilities...in which she is experiencing some other quality: only epistemic possibilities involving phenomenal redness remain." Notice that in this example, the target experience is a determinable (namely, phenomenal redness), yet the concept is nevertheless characterized as eliminating *all* epistemic possibilities for what its referent is like besides those involving red experiences—I'll return to this point later.

A third source of evidence is that philosophers working on phenomenal concepts/knowledge commonly endorse claims that we will later see are incompatible with the degreed picture. These include the claims that (1) phenomenal concepts refer to their target experiences directly via phenomenal character, (2) phenomenal concepts can be acquired only by those who have had the relevant target experience, and (3) phenomenal concepts enable one to know the essences of their target experiences.¹² It may not yet be obvious why the degreed picture is in tension with these claims—I'll discuss these points in §6.

There may be a temptation to think that many physicalists nowadays disavow the all-or-nothing picture. After all, most physicalists deny that phenomenal concepts enable one to know everything about their target experiences (since phenomenal concepts don't reveal the physical nature of their target experiences).¹³ However, the all-or-nothing picture concerns only

¹² Other common commitments that are arguably in tension with the degreed picture, but which I won't discuss in detail, include the ideas that phenomenal concepts have modes of presentation that are identical to their referents (Loar [1990], Carruthers [2003], Tye [2003]), that phenomenal concepts are partially constituted by their target experiences (Papineau [2002], Balog [2012]), and that phenomenal concepts have identical primary and secondary intensions (Chalmers [2009], Goff [2011]).

¹³ For some discussions of these versions of physicalism, see Loar [1990], Balog [1999, 2012], Papineau [2002, 2006], Stoljar [2005], Chalmers [2007], and Pereboom [2011].

what phenomenal concepts reveal about *what it's like to undergo* their target experiences. A philosopher may very well hold that phenomenal concepts don't reveal the metaphysical nature of their target experiences yet still assume that phenomenal concepts yield exact knowledge of what it's like. And the sources of evidence mentioned above indicate that many physicalists implicitly favor this kind of view.

Since few philosophers have explicitly discussed the idea of approximate knowledge of what it's like, some readers may wonder whether prior discussions of phenomenal concepts were merely idealizations intended to be compatible with the degreed picture (rather than implicit commitments in favor of the all-or-nothing picture). Given the points expressed above, I think it's clear that this hypothesis won't apply across the board. But even if we were to suppose that the degreed picture is what many philosophers implicitly intended all along, it remains the case that the degreed picture hasn't been developed in detail and that its philosophical implications have been underappreciated.

§2 Epistemic Abilities

A first source of motivation for the degreed picture appeals to limits in subjects' epistemic abilities. In what follows, I'll present three cases involving subjects whose phenomenal concepts arguably yield only approximate knowledge of what it's like. Each case will concern *scarlet experience*, which we can stipulate to be the kind of color experience normal humans have when looking at scarlet color chips under ideal conditions. Let's also stipulate that the property of being a scarlet experience is maximally determinate and that there are no borderline cases of scarlet experience.

CASE 1: Ms. Scarlet has spent her life in a black and white room studying (but not having) color experiences. On day n , Ms. Scarlet's captors allow her to leave her room for five minutes to enter a new room. In this new room are 100 color chips, each of which is a differing shade of red, each of which is labeled with the term for the kind of experience induced in Ms. Scarlet when she looks at that object, and one of which is scarlet (and

labeled 'scarlet'). On each day after day n , Ms. Scarlet's captors allow her to reenter the new room for five minutes to look at the color chips. On each day, Ms. Scarlet also takes a test where she is asked to identify the color experiences induced by unlabeled color chips. Before day n , her ability to recognize scarlet experiences is basically non-existent. On day $n+1$, her ability to recognize scarlet experiences is markedly better, though she still makes mistakes (such as categorizing a vermilion experience as scarlet or categorizing a scarlet experience as crimson). By day $n+100$, her ability to recognize scarlet experiences is highly reliable, even when she is asked to identify scarlet experience against nearby red experiences.

If we follow conventional wisdom,¹⁴ Ms. Scarlet acquires a phenomenal concept of scarlet experience the very first time she leaves her room and sees the scarlet color chip. But what explains the changes in her epistemic abilities on the subsequent days? It's natural to think that on day n Ms. Scarlet knows only approximately what it's like to see scarlet, while by day $n+100$ Ms. Scarlet knows exactly what it's like to see scarlet. Since Ms. Scarlet's epistemic abilities gradually improve from day n to day $n+100$, and since she already possesses a phenomenal concept of scarlet experience by the end of day n , it follows that the epistemic changes cannot be explained merely by whether Ms. Scarlet possesses a phenomenal concept of scarlet experience. Instead, it seems that from day n to day $n+100$, Ms. Scarlet's phenomenal concept of scarlet experience changes so as to yield increasingly exact knowledge of what it's like to see scarlet.

CASE 2: Prof. Rainbow and Prof. Gray are professors who study color experience. Prof. Rainbow, moreover, has excellent epistemic abilities with respect to color experience: for example, she can imagine scarlet experience precisely and vividly, and she can acquire knowledge of many phenomenal facts about scarlet experience just by thinking about what it's like to see scarlet. Prof. Gray, on the other hand, has monochromacy (and so has never

¹⁴ I say 'conventional wisdom' in reference to standard views about Mary from Jackson [1982], whose situation parallels that of Ms. Scarlet (until day n).

had a scarlet experience): nevertheless, he still sometimes tries to imagine what it's like to see scarlet (and imagines it as a kind of chromatic experience), and he can still know on that basis that what it's like to see scarlet is more similar to what it's like to see gray than what it's like to hear a trumpet or feel pain. Though both Prof. Rainbow and Prof. Gray possess concepts of scarlet experience, Prof. Rainbow's concept arguably yields more exact knowledge of what it's like to see scarlet.

It may be tempting to argue that Prof. Gray simply lacks a phenomenal concept of scarlet experience. But consider Prof. Black, who is an equally competent expert on color experiences but who has never had any visual experiences (Prof. Black doesn't even have eyes). If neither Prof. Gray nor Prof. Black possesses a phenomenal concept of scarlet experience, then (by definition) neither is able to think about what it's like to see scarlet. However, Prof. Gray arguably has a better grasp than Prof. Black of what it's like to see scarlet (even though neither knows what it's like to see scarlet as well as Prof. Rainbow does). If Prof. Gray has some knowledge of what it's like to see scarlet, then Prof. Gray must be able to think about what it's like to see scarlet, from which it follows that Prof. Gray must possess a phenomenal concept of scarlet experience. Still, Prof. Gray's phenomenal concept of scarlet experience yields less exact knowledge of what it's like to see scarlet than Prof. Rainbow's phenomenal concept of scarlet experience, so Prof. Gray's phenomenal concept of scarlet experience is less pure than Prof. Rainbow's.

CASE 3: Consider your own knowledge of what it's like to see scarlet. You can reliably recognize instances of scarlet experience when it's presented against dissimilar experiences (such as non-red experiences), you can imagine what it's like to see scarlet (to at least some degree of precision and vivacity), you can know that seeing scarlet is similar to seeing other shades of red just by thinking about what it's like to undergo those experiences, and you have a better grasp of what it's like to see scarlet than what it's like to echolocate. Therefore, you have at least some knowledge of what it's like to see scarlet. However, I suspect that you cannot reliably recognize

scarlet experience when it's presented against extremely similar red experiences, that you cannot imagine exactly what it's like to experience scarlet (as opposed to other nearby red experiences), that you cannot know simply on the basis of your phenomenal concepts that scarlet experience is exactly as similar in hue to crimson experience as it is to amaranth experience, and that you are in a better position to know what it's like to see scarlet if you are actually seeing scarlet than if you are merely thinking about scarlet experience. Therefore, you don't know exactly what it's like to see scarlet.

My appeal to these cases draws upon the assumption that limits in our recognitional, imaginative, and inferential abilities are evidence that our phenomenal concepts yield only approximate knowledge of what it's like. Since we often cannot recognize target experiences with perfect reliability, imagine target experiences with perfect detail, or know all phenomenal facts about target experiences just on the basis of thinking about those target experiences, we have reason to think that our phenomenal concepts yield only approximate knowledge of what it's like. While it's possible to reject this connection between our epistemic abilities and our phenomenal concepts, doing so leaves one in an awkward position: if our phenomenal concepts enable us to know exactly what it's like to undergo their target experiences, then why do the associated epistemic abilities have a graded structure?

Though scarlet experience is my focal example, it's easy to see that these arguments generalize to phenomenal concepts for other experiences as well. As other examples, consider the maximally determinate total experience you had upon first waking up this morning, the rich flavor experience you have when tasting a complex dish, or the visual experience you have when looking at a noisy mosaic of pixels. Given your recognitional, imagination, and inferential abilities, it's plausible that your phenomenal concepts yield some knowledge of what it's like to have each of those experiences. But given the limits in your epistemic abilities, it's also plausible

that you don't know exactly what it's like to have each of those experiences.¹⁵

§3 The Semantics of 'Knows What It's Like'

A second source of motivation for the degreed picture appeals to the semantics of 'knows what it's like' expressions.

Knows-Wh

The standard semantic analyses of 'knows what it's like' expressions take such expressions to be a species of *know-wh* expressions,¹⁶ or expressions where the complement of 'know' is an interrogative clause (headed by 'why', 'when', 'where', 'whether', or 'how') rather than a declarative clause (headed by 'that'). As examples of know-wh expressions, consider 's knows where the party is' or 's knows when the seminar starts'. In these expressions, the interrogative clauses can take on graded adverbs like 'exactly' or 'approximately': one can know *exactly* where the party is, or *approximately* when the seminar starts. And these adverbial modifiers apply just as well to sentences that attribute knowledge of what it's like:

- (1) Ms. Scarlet knows exactly what it's like to see scarlet.
- (2) I know approximately what it's like to taste vegemite.

¹⁵ On ability theories of phenomenal knowledge (such as Lewis [1998/2004]), what it *is* to know what it's like to have an experience is to have certain kinds of epistemic abilities (such as the abilities to recognize, imagine, and remember certain experiences). If an ability theory is correct, then it's even more plausible that the degreed structure of these epistemic abilities supports the degreed picture of phenomenal knowledge.

¹⁶ See Lycan [1996], Hellie [2004], Tye [2011], Stoljar [2016], Cath [2019, forthcoming], and Lynch [2020]. The most developed amongst these accounts is Stoljar [2016], who argues that 'knows what it's like' expressions quantify over ways of being affected by events, analogous to how 'knows where' expressions quantify over locations and 'knows when' expressions quantify over times.

According to standard theories of know-wh expressions, a know-wh sentence is true just in case the subject of the sentence knows an answer to the relevant embedded wh-question.¹⁷ For example, the sentence 'I know when the seminar starts' is true just in case there's some time (or situation) *t* such that I know that *t* is when the seminar starts. When the sentence contains an adverbial modifier, the truth-conditions are modified accordingly. For example, the sentence 'I know *approximately* when the seminar starts' is true just in case there's some sufficiently long interval of time such that I know that the seminar starts within that interval. Following Stoljar [2016], we might then take a sentence like 'Ms. Scarlet knows exactly what it's like to see scarlet' to be true just in case there's some exact *way* such that Ms. Scarlet knows that it is that way to see scarlet. This indicates that semantic analyses of know-wh sentences (and their modifications by graded adverbs) apply straightforwardly to 'knows what it's like' expressions.

Now, one might object by noting an ambiguity in the expression 'knows what *x* is like'. The semantic analysis above assumes an *interrogative reading*, where one knows what *x* is like just in case one knows an answer to the question *What is x like?* But there's also a *free-relative reading*, where one knows what *x* is like just in case one knows the experience *x*.¹⁸ The interrogative reading interprets the relevant knowledge as propositional; the free-relative reading interprets the relevant knowledge as objectual. And while graded adverbs such as 'exactly' or 'approximately' sound fine when applied

¹⁷ See Stanley & Williamson [2001], Brogaard [2008, 2009], and Pavese [2017] for some discussions. Note that the above authors are primarily concerned with the kind of knowledge attributed by sentences involving infinitival constructions ('I know how to party'), whereas 'knows what it's like' expressions are ostensibly more analogous to sentences containing finite clause constructions ('I know how the party went'). Note also that while Pavese argues that all knowledge is "absolute," her analysis is compatible with the claims of this paper (and, more generally, with the existence of inexact knowledge).

¹⁸ See Habgood-Coote [2018] and Stoljar [2018] for discussions of this distinction. See Farkas [2006] and Bengson & Moffett [2011] for defenses of objectual theories of know-wh.

to the interrogative readings of such expressions, they sound off when applied to the free-relative readings of such expressions.

To develop this worry, we can paraphrase the relevant 'knows what it's like' sentences in order to force the free-relative readings. One way to do so is by replacing the expression 'what x is like' with an objectual clause, such as 'the feeling of x '. This results in a new sentence whose natural interpretation is equivalent to the free-relative reading. In other words, the new sentence is true just in case the subject has objectual knowledge of the relevant experience (rather than interrogative knowledge of a proposition that answers the embedded question). Once we make these paraphrases, we find that adding graded adverbs such as 'exactly' or 'approximately' makes the relevant sentences sound infelicitous:

- ? (3) Ms. Scarlet knows exactly the feeling of scarlet.
- ? (4) I know approximately the feeling of vegemite.

However, while these sentences indeed sound peculiar, I suspect the peculiarity is merely due to the fact that different kinds of adverbial modifiers apply to sentences with interrogative vs. objectual clauses. For example, while the sentence 'S knows approximately Paris' sounds off, the sentence 'S knows Paris very well' sounds fine. The difference may be both a matter of which graded adverb is used and where the graded adverb occurs. Some graded adverbs (such as 'exactly' and 'approximately') seem inapplicable to objectual clauses, whereas other graded adverbs (such as 'very well' or 'barely') work fine for such cases. And whereas the graded adverb most naturally occurs immediately after the verb in sentences with interrogative clauses ('S knows approximately wh- ϕ '), the graded adverb most naturally occurs after the entire verb phrase in sentences with objectual clauses ('knows x very well'). These observations suggest that we should still be able to construct felicitous degreed modifications that apply to the free-relative reading of 'knows what it's like', so long as the graded adverbs satisfy the constraints above. To evaluate this hypothesis, let's once again substitute in

'the feeling of x ' in order to generate a sentence whose natural interpretation is equivalent to the free-relative reading:

- (5) Ms. Scarlet knows the feeling of scarlet very well.
- (6) I barely know the feeling of vegemite.

These sentences sound fine. So, whether 'knows what it's like' expressions are interpreted in the interrogative or the free-relative sense, the standard semantic analyses of such expressions seems to align with the de-greed picture. In fact, this point is strengthened when we consider comparative constructions, such as expressions of the form 'A knows ϕ better than B does'. For example, one can say 'A knows where the party is better than B does' (interrogative reading), or 'A knows Paris better than B does' (free-relative reading). These comparative constructions work just as well for 'knows what it's like' expressions, even when we specifically induce either the interrogative reading (as in 8) or the free-relative reading (as in 9):

- (7) Prof. Rainbow knows what it's like to see scarlet better than Prof. Gray does.
- (8) Prof. Rainbow knows the answer to the question of what it's like to see scarlet better than Prof. Gray does.
- (9) Prof. Rainbow knows the feeling of scarlet better than Prof. Gray does.

Here's the upshot: whether we adopt the interrogative or the free-relative reading of 'knows what it's like' expressions, standard semantic analyses support the de-greed picture.

Knowledge Ascriptions

I've argued that subjects sometimes have merely approximate knowledge of what it's like to have an experience. For example, while Prof. Gray doesn't know what it's like to see scarlet as well as Prof. Rainbow does, he still has some very approximate knowledge of what it's like to see scarlet.

Or, even if I've never tasted vegemite, I may still know that the flavor experience of vegemite is more similar to that of soy sauce than that of milk. Yet in these circumstances, it seems inappropriate to say that the subject knows what it's like to undergo the target experience:

- ? (10) Prof. Gray knows what it's like to see scarlet.
 ? (11) I know what it's like to eat vegemite.

Since these sentences sound infelicitous (given the described contexts), it may seem that the degreed picture makes implausible predictions about the circumstances under which a subject knows what it's like to have a given experience.

In response, the degreed theorist ought to resist the inference from 's knows approximately what x is like' to 's knows what x is like'. This follows from a more general principle: 's knows approximately wh- ϕ ' doesn't entail 's knows wh- ϕ '. Let's consider an example where that inference fails.¹⁹ Suppose you know that the seminar starts sometime this afternoon. You thus have approximate knowledge of when the seminar starts—you can rule out some possibilities for its starting time. But it would nevertheless be inappropriate in this circumstance to say that you know when the seminar starts. To count as knowing when the seminar starts, your knowledge must surpass a certain standard of exactness. That standard isn't maximal exactness: for example, you need not know the starting time to the exact millisecond. Instead, there's some intermediate degree of exactness that sets the standard for knowledge.

What determines the relevant standard for a knowledge-wh ascription? The orthodox view is that the standard is context-sensitive. If, for example, the stakes are high for when the seminar starts (perhaps you're a student in a strict military academy that has no tolerance for tardiness), then

¹⁹ A similar pattern occurs with gradable adjectives: ' x is approximately F ' doesn't entail ' x is F '. For example, a person might be approximately 70kg without being 70kg.

the standard for knowledge increases. If, on the other hand, the stakes are low for when the seminar starts (perhaps the seminar is a free-wheeling group discussion where one can come and go as one pleases), then the standard for knowledge decreases. If we adopt the interrogative reading of knows-wh, then the standard might be a matter of the number, specificity, or relevance of the answers that subject knows to the relevant question. If we adopt the free-relative reading, then the standard might be a matter of how well-acquainted the subject is with the object of knowledge.

These considerations straightforwardly apply to 'knows what-it's-like' expressions. On my view, whether a subject knows what it's like to undergo an experience depends both on the exactness of their phenomenal knowledge and on the context of evaluation of the knowledge ascription. In order for it to be appropriate to say 'S knows what x is like' (for some target experience x), S's knowledge of x must surpass the contextually-determined standard of exactness. Put another way, to count as knowing what x is like, one's phenomenal concept of x must surpass the contextually-determined degree of purity. If one has only very approximate phenomenal knowledge of a target experience, then in many contexts the relevant standard won't be surpassed, and so the subject won't count as knowing what it's like to have the target experience. But in most cases, the subject need not know exactly what the target experience is like: some intermediate standard of exactness is good enough. This view generates plausible predictions about when it's appropriate to make unqualified 'knows what it's like' ascriptions. Furthermore, it takes 'knows what it's like' expressions to conform to the semantics of other kinds of 'knows-wh' expressions.

I've now argued that the semantics of 'knows what it's like' expressions aligns with the degreed picture. An all-or-nothing theorist could still resist by holding that the semantic structure of 'knows what it's like' expressions mismatches the epistemic structure of knowledge of what it's like. But those who make such a move face an explanatory burden. If knowing what it's like is all-or-nothing, then why do our expressions that attribute

knowledge of what it's like take on graded adverbs, comparative modifiers, and otherwise behave like degreed expressions?

§4 Objections

I'll now address some objections to the degreed picture.

The Constitution Objection

The degreed picture may seem in tension with the idea that thinking about an experience involves undergoing the experience that one is thinking about.²⁰ For example, one might argue that when one deploys the concept RED, one undergoes a red experience. If one cannot even think about an experience without actually undergoing that experience, then how could phenomenal concepts yield merely approximate knowledge of what it's like?

Well, it's clearly false that one literally cannot think about what it's like to undergo an experience unless one is actually undergoing that exact experience. You can think about what it's like to be in severe pain without actually experiencing severe pain; if you're faced with the choice of either thinking about pain or experiencing pain, it's obvious which option is better. A more defensible idea is that thinking about an experience requires having an imaginative experience that resembles (but is usually phenomenally distinct from) the target experience. But that's compatible with the degreed picture, since there's no obvious reason for holding that imaginative experiences that merely resemble their target experiences must yield exact knowledge of what it's like to undergo those target experiences.

It may be tempting to respond by appealing to "direct phenomenal concepts," or concepts of occurrent experiences that are partially constituted

²⁰ See Papineau [2002] and Balog [2012] for examples of views of this kind. Balog [2009] characterizes such views as involving "the idea that phenomenal concepts are constituted by the phenomenal experiences they refer to."

by those occurrent experiences.²¹ Those who accept the existence of direct phenomenal concepts might then argue that direct phenomenal concepts yield exact (rather than merely approximate) knowledge of what it's like. However, the degreed picture doesn't claim that *no* phenomenal concepts yield exact knowledge of their target experiences. The idea that phenomenal concepts vary in degrees of purity is compatible with thinking that there are special limit cases that have maximal purity. If direct phenomenal concepts exist, then they are candidates for those limit cases.

The Determinability Objection

Since scarlet is a determinate of red (and red a determinable of scarlet), it may be tempting to think that what I call a phenomenal concept that yields approximate knowledge of scarlet experience is really a phenomenal concept that yields exact knowledge of red experience. If this view is correct, then you don't possess a phenomenal concept of scarlet experience at all: instead, you possess merely a phenomenal concept of red experience.

As an initial response, note that we don't usually impose such demanding conditions on concept possession. Consider how one's concepts ARTHRITIS and ELM TREE and WEIGHT can refer to arthritis and elm tree and weight even if those concepts don't yield knowledge that arthritis is a disease of the joints, or that elm trees look the way they do, or that weight is an extrinsic property. The objector might counter that there are asymmetries between phenomenal concepts and other kinds of concepts. But even if we accept that there are such asymmetries (an issue I'll discuss in §6), the current objection still leads to counterintuitive consequences. If you don't possess a phenomenal concept of scarlet experience, then (by definition) you cannot think about what it's like to see scarlet. Yet on the face of it, you've already thought many times about what it's like to see scarlet as you've read this paper. What else might you have been thinking about as you considered the

²¹ See Chalmers [2003] and Horgan & Kriegel [2007] for arguments in favor of direct phenomenal concepts. See Sundström [2011] for arguments against.

cases discussed earlier? Instead of holding that you weren't thinking about scarlet experience despite reading (and understanding) sentences about scarlet experience, it's more natural to hold that you thought inexactly about what it's like to see scarlet as you read this paper.

Is there some countervailing reason for denying that you have been thinking about scarlet experience? A first response is that your phenomenal concept of scarlet experience has a mode of presentation with a coarse-grained content: for example, perhaps the mode of presentation represents the target experience only as some shade of red experience (leaving open which exact shade it is). However, this response is more naturally understood as a view about the nature of degrees of purity rather than as an objection to the degreed picture. A second response is that when you think that you're thinking about what it's like to see scarlet, you're really thinking about what it's like to see red and drawing an inference from your non-phenomenal knowledge that scarlet experience is a type of red experience. But while that may be one way of acquiring knowledge that scarlet experience is a type of red experience, it remains plausible that you can simply think about what it's like to see scarlet without drawing inferences from your beliefs about the relationship between scarlet experience and red experience. Unless we are systematically mistaken about the inferential structure of these mental processes, this response overintellectualizes the psychological story.

The Vagueness Objection

A concept is *vague* just in case it has borderline cases and *sharp* just in case it's not vague.²² The concept BALD is vague; the concept PRIME NUMBER is sharp.²³

²² I'll assume that vagueness is a semantic (rather than epistemic) phenomenon. I think that epistemicists about vagueness have analogous reasons for disentangling purity from vagueness. But it's a bit more delicate to do so from within an epistemicist framework, and setting epistemicism aside will make matters simpler here.

²³ Vagueness is also commonly characterized as a property of *predicates*. But it doesn't make sense to think of purity as a property of predicates. For example, there's no sense in which the predicate 'is a scarlet experience' is more or less pure than the predicate 'is a red

Since vague concepts are inexact, it may be tempting to think that purity is simply a matter of vagueness.

Although there's a sense in which both vagueness and purity are a matter of inexactness, the nature of the inexactness differs: vagueness essentially involves borderline cases, whereas purity is independent of borderline cases. When I earlier defined the term 'scarlet experience', I stipulated that there are no borderline cases of scarlet experience: any color experience is either determinately a scarlet experience or not. If there are no borderline cases of scarlet experience, then any concept of scarlet experience must be sharp, since what it is for a concept to be vague is for that concept to allow for borderline cases. Yet even though concepts of scarlet experience are sharp, they may nevertheless fail to be maximally pure. I argued that your own concept of scarlet experience isn't maximally pure, and I sketched cases involving other subjects (Ms. Scarlet, Prof. Rainbow, Prof. Gray) whose phenomenal concepts of scarlet experience vary in degree of purity. Since purity can vary even when vagueness is fixed, purity is distinct from vagueness.

Is there vagueness without impurity? Suppose that persimmon experience is a borderline case of red experience, that you're as competent in thinking about red experience as one could possibly be, and that you know exactly what it's like to see persimmon. Your concept of red experience is vague since it has borderline cases. But your concept is also maximally pure, since you can know everything there is to know about what it's like to see red on the basis of your phenomenal concept. As a contrast case, consider Prof. Gray, who has a phenomenal concept of red experience, but whose phenomenal concept doesn't even enable them to know that persimmon experience is a borderline case of red experience. The colorblind person's concept of red experience is as vague as (but less pure than) your concept of red

experience' (though the former might be said to be more determinate than the latter, in virtue of the former denoting a determinate of the latter). This is further evidence that purity is distinct from vagueness (as well as determinability).

experience. Therefore, there's a double dissociation between purity and vagueness.

§5 The Structure of Purity

In what follows, I'll develop a framework that systematizes the relationship between inexact knowledge of what it's like and degrees of purity of phenomenal concepts. The core idea is that all phenomenal concepts rule out some (and leave open other) "phenomenal possibilities." The more phenomenal possibilities ruled out by a phenomenal concept, the more exact the knowledge of what it's like yielded by that phenomenal concept. I'll also show how the framework enables us to (a) disentangle purity from determinability and vagueness, and (b) characterize which phenomenal facts one can know on the basis of a given phenomenal concept.

The ensuing discussion is a bit technical. Readers less interested in these sorts of issues might prefer to skip to the next section.

Purity

Let a *phenomenal possibility* be a candidate for what it might be like to undergo a target experience. Under the degreed picture, most phenomenal concepts rule out some (and leave open other) phenomenal possibilities. For example, your phenomenal concept SCARLET rules out the possibility that what it's like to see scarlet is what it's (in fact) like to feel pain, but (given the arguments from earlier) it may not rule out the possibility that what it's like to see scarlet is what it's (in fact) like to see vermillion.

You might be tempted to think of phenomenal possibilities as *total experiences*, or maximally-complete ways that experiences could be. This would parallel the characterization of possible worlds as maximally-complete ways that the world could be. But this analysis is inadequate for satisfying the core theoretical role assigned to phenomenal possibilities: namely, as candidates for what it might be like to undergo a target experience (where 'target experiences' are the referents of phenomenal concepts). This is because many phenomenal concepts (such as SCARLET, RED, or COLOR) refer to phenomenal

properties that only partially (rather than completely) characterize what it's like to have an experience. For this reason, it's better to think of phenomenal possibilities as *sets of total experiences*.²⁴ Since every phenomenal concept is associated with a set of phenomenal possibilities (namely, those it rules out), every phenomenal concept is associated with a set of sets of total experiences. The set of phenomenal possibilities left open by a phenomenal concept specifies the way that the phenomenal concept characterizes what it's like to undergo its target experience.

The *degree of purity* of a phenomenal concept can then be specified as the proportion of the set of phenomenal possibilities ruled out by that phenomenal concept. This enables us to assign every phenomenal concept a purity value between 0 and 1, where higher values indicate higher degrees of purity.²⁵ In what follows, I'll denote purity values using subscripts: for example, SCARLET_{0.2} denotes a relatively impure phenomenal concept of scarlet, while RED₁ denotes a maximally pure phenomenal concept of red.

This enables us to specify the limit cases for purity. At one limit are *maximally pure* phenomenal concepts, which have purity value 1, which rule out all phenomenal possibilities except one, and which yield perfectly exact knowledge of what it's like to have the target experience. At the other limit are *minimally pure* phenomenal concepts, which have purity value 0, which rule out no phenomenal possibilities (but still specify that the target experience is an experience), and which yield maximally approximate knowledge of what it's like to have the target experience. Between the extremes are

²⁴ On standard possible-worlds semantics, kind concepts (such as WATER, CAT, or GOLD) are associated with sets of possible worlds. By contrast, I take phenomenal concepts to be associated with sets of sets of total experiences. This additional structure is needed to disentangle purity from determinability. If non-phenomenal concepts likewise vary in how precisely they characterize their referents, then there may likewise be motivation for modeling non-phenomenal concepts with this additional structure.

²⁵ It may be useful to apply a concave transformation to purity values so that purity values are scaled logarithmically (instead of linearly). This way, a purity value of (say) $\frac{1}{2}$ would denote a phenomenal concept with a moderate (rather than very low) degree of purity.

partially pure phenomenal concepts, which have purity values between 0 and 1, which rule out some (but not all) phenomenal possibilities, and which yield approximate knowledge of what the target experience is like.

We can now use this framework to systematically disentangle purity and determinability. Purity is a matter of the size of the set of phenomenal possibilities associated with a phenomenal concept (meaning how many possibilities are ruled out for what it might be like to undergo the target experience). By contrast, determinability is a matter of the sizes of the sets of total experiences that comprise those phenomenal possibilities themselves (meaning how many different ways each of those phenomenal possibilities can be instantiated). This structural difference is illustrated in the diagram below: each row contains the name of a phenomenal concept and an illustration of the set of phenomenal possibilities left open by that phenomenal concept, and each circle represents a phenomenal possibility, with the size of the circles corresponding to degrees of determinability:

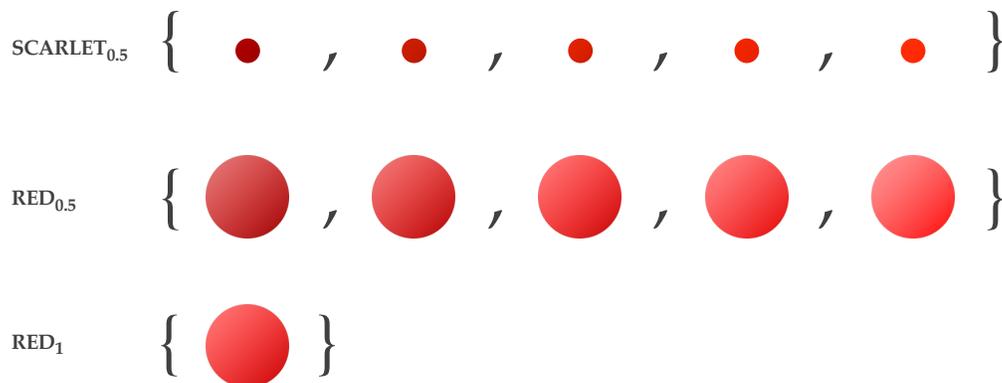


FIGURE 1: Purity vs. determinability.

To see how determinability dissociates from purity, consider SCARLET_{0.5} versus RED_{0.5}. Both phenomenal concepts are equally pure since they leave open the same number of phenomenal possibilities. But each phenomenal possibility for SCARLET_{0.5} is more specific than each phenomenal

possibility for RED_{0.5} (meaning that SCARLET_{0.5} represents its target experience as a more determinate phenomenal property than RED_{0.5}). To see how purity dissociates from determinability, consider RED_{0.5} versus RED₁. Both phenomenal concepts are equally determinate since they leave open equally specific phenomenal possibilities. But RED₁ leaves open only one phenomenal possibility while RED_{0.5} leaves open five (meaning RED₁ is purer than RED_{0.5}).

There's also the distinction between both those notions and vagueness. Vagueness isn't explicitly represented within the framework, and how it ought to be represented may depend on which theory of vagueness is correct. But it's natural to think of vague phenomenal concepts as those where it's sometimes borderline which phenomenal possibilities are ruled out. What it is for a case to be borderline will depend on which theory of vagueness is correct. But it's plausible that whichever theory is right, vagueness will be independent of both purity and determinability.

Facts, Knowledge, and Concepts

Which phenomenal facts can one know on the basis of a given phenomenal concept? If the all-or-nothing picture were true, then we might expect the answer to be *every* phenomenal fact. But on the degreed picture, phenomenal concepts with less than maximal purity will yield knowledge of only some phenomenal facts about the target experience. A challenge, then, is to develop an account of which phenomenal facts one can know on the basis of a phenomenal concept that works for arbitrary degrees of purity. The framework developed in this section enables us to answer this challenge.

Here's the basic idea. For any phenomenal concept A, there will be a set of phenomenal properties that would be instantiated by A's target experience no matter which of A's phenomenal possibilities turns out to be that target experience. In other words, there will be a set of phenomenal properties that are instantiated by every total experience of every phenomenal possibility left open by the phenomenal concept. For example, my phenomenal concept SCARLET guarantees that its target experience is a kind of color experience (even if it leaves open whether what it's like to have the target

experience is what it's in fact like to see vermillion). Given this, it's plausible that one can know (on the basis of one's phenomenal concept) that the target experience has all of the phenomenal properties within that set. Putting this together yields the following principle: a phenomenal fact P is knowable on the basis of a phenomenal concept A just in case all of the phenomenal properties attributed by P hold for all of the total experiences associated with A's phenomenal possibilities.

This analysis generates the right predictions for limit cases. If A is a maximally pure phenomenal concept (meaning A leaves open a single phenomenal possibility), then one can know all phenomenal facts about A's target experience on the basis of A (since every phenomenal fact that holds for the target experience also holds for all of A's phenomenal possibilities). If B is a minimally pure phenomenal concept (meaning B leaves open every phenomenal possibility), then the only phenomenal facts about B's target experience that one can know on the basis of B are those that would hold for any experience whatsoever (since only phenomenal facts that hold for all experiences hold for all of B's phenomenal possibilities).

Furthermore, the epistemic relations between phenomenal concepts will be mirrored by the formal relations between the associated sets of phenomenal possibilities. If phenomenal concept A and phenomenal concept B are associated with *identical* sets of phenomenal possibilities, then they yield knowledge of exactly the same phenomenal facts. If A and B *overlap*, then for all one knows on the basis of A and B, the target experiences of A and B may be the same. If A and B are *disjoint*, then one can rule out the possibility that A and B have the same target experience. And if A is *strictly purer* than B (meaning A rules out all phenomenal possibilities B rules out and more), then one can know strictly more phenomenal facts on the basis of A than on the basis of B.

§6 Philosophical Implications

The rest of this paper discusses implications of the degreed picture for questions concerning the acquisition conditions, the requirements for mastery, and the referential mechanisms of phenomenal concepts. These discussions will be brief. Their purpose is to exhibit some of the ways in which the degreed picture is philosophically consequential, and to further illustrate how the degreed picture works.

Concept Acquisition

This paper began by contrasting your knowledge of feeling pain, seeing red, and smelling cinnamon with your knowledge of the echolocation experiences of bats, the proprioceptive experiences of octopuses, and the electromagnetic experiences of aliens. The standard explanation of this asymmetry is that you possess phenomenal concepts of the former (but not the latter) experiences. I've argued that this standard explanation oversimplifies.

According to the degreed picture, you have relatively exact knowledge of what it's like to feel pain, to see red, and to smell cinnamon because your phenomenal concepts of those experiences have a high degree of purity. By contrast, you have extremely approximate knowledge of what it's like to echolocate, to move one's seventh tentacle spirally, and to sense a polarized magnetic field because your phenomenal concepts of those experiences have extremely low degrees of purity. The asymmetry isn't a matter of whether you possess phenomenal concepts for the relevant experiences, but instead a matter of how pure your phenomenal concepts are. From a semantic standpoint, it's probably incorrect to say that you know what it's like to have those latter experiences. But that's a superficial fact about the contextually-determined standard for 'knows what it's like' ascriptions, rather than a deep fact about the epistemic structure of your phenomenal concepts and phenomenal knowledge.

The idea that you possess phenomenal concepts even of bat, octopus, and alien experiences may strike some as counterintuitive. I suspect that in many cases, this reaction will merely be residue from the all-or-nothing

picture. But more importantly, the way we use the term 'phenomenal concept' ought to be guided principally by the theoretical roles that we want phenomenal concepts to play. In my view, the most central theoretical role is that phenomenal concepts are concepts of experiences that enable one to think about what it's like to have those experiences. And I've argued that the difference between our ability to think about the familiar experiences of normal humans vs. the exotic experiences of other kinds of creatures is a matter of degree, rather than a matter of kind.

If we were to instead reserve the term 'phenomenal concept' for concepts of experiences that surpass a certain threshold of purity, then we could secure the result that we lack phenomenal concepts for bat, octopus, and alien experiences. But that wouldn't change the epistemic structure of phenomenal concepts and phenomenal knowledge. Any threshold we choose would still be an arbitrary cutoff point, rather than an epistemic joint.

It's worth noting that there's an asymmetry between ascriptions of phenomenal concepts and ascriptions of phenomenal knowledge. In the case of phenomenal knowledge, there are natural language expressions of the form 'S knows what x is like', and we want a theory that generates the right predictions about when these knowledge ascriptions are felicitous. By contrast, there aren't analogous natural language constraints for our use of the term 'phenomenal concept'. Nevertheless, it's natural to think that in order for a subject to have knowledge (whether approximate or exact) of what it's like to have an experience, they must possess a phenomenal concept of that experience. I've argued that it's relatively easy to acquire at least approximate knowledge of what it's like to have an experience. We thus have reason to favor a permissive view about the possession of phenomenal concepts.

Are there any experiences for which we simply cannot acquire a phenomenal concept? The least pure phenomenal concepts are those that yield only the knowledge that there's something it's like to have the experience (with no further specificity on what exactly the experience is like). These minimally pure phenomenal concepts eliminate no phenomenal possibilities (but still characterize the target experience as an experience). Since we can

represent any experience whatsoever as being such that there's something it's like to be in it, we can always acquire at least a minimally pure phenomenal concept of any experience.

You might then worry that the degreed picture trivializes the acquisition conditions for phenomenal concepts. But notice that there remains a significant difference between concepts that represent experiences *as* experiences (i.e., phenomenal concepts) versus concepts that refer to experiences but that don't represent them as experiences (i.e., non-phenomenal concepts that refer to experiences). Though zombies arguably can acquire non-phenomenal concepts that refer to experiences (since it's relatively easy to acquire a concept whose referent happens to be an experience), zombies arguably cannot acquire even minimally pure phenomenal concepts (at least if we grant the plausible assumption that zombies cannot think about experiences in terms of what it's like to have them).

On the degreed picture, there's a smooth transition from maximally pure phenomenal concepts to minimally pure phenomenal concepts, at which point we cross the threshold to non-phenomenal concepts of experience. This mirrors a smooth transition from maximally exact phenomenal knowledge to maximally approximate phenomenal knowledge, at which point we cross the threshold to no phenomenal knowledge at all. For the latter transition, there will be some point that serves as the standard for unqualified 'knows what it's like' ascriptions. But that standard will be context-sensitive, whereas the degreed structure itself is invariant.

A noteworthy consequence concerns the *experience requirement*, the idea that in order to acquire a phenomenal concept of an experience, one must have undergone that experience (or another experience that is relevantly similar).²⁶ Against this, I've argued that it's possible to acquire phenomenal concepts for all sorts of experiences one has never had. Though the experience requirement appears plausible if we presume the all-or-nothing

²⁶ See, for example, Sturgeon [1994], Tye [1995], and Papineau [2006] for endorsements of the experience requirement. See Ball [2009] for arguments against the experience requirement.

picture, the requirement is less compelling once we adopt the degreed picture. The grain of truth in the experience requirement is that one can typically acquire much purer phenomenal concepts for experiences one has had than for experiences one has never had. But since possessing a phenomenal concept for an experience doesn't require knowing exactly what it's like to have that experience, the experience requirement is false.

Concept Mastery

I've assumed that concepts are mental representations. By contrast, discussions of concept mastery standardly take concepts to be abstract entities. Under the abstract entity framework, many different mental representations can be used to grasp the same concept, which yields a natural distinction between merely possessing a concept vs. achieving mastery of a concept. Under the mental representation framework, however, a change in one's mental representation often means a change in the concept itself. This makes it somewhat awkward to even formulate questions about concept mastery within the mental representations framework, and makes it easy for those of us who favor the mental representation framework to overlook issues about concept mastery.²⁷

Under the degreed picture, it's natural to think of concept mastery as requiring possession of a maximally pure phenomenal concept. If your phenomenal concept of scarlet experience doesn't enable you to know exactly what it's like to see scarlet, then it's plausible that you haven't yet achieved mastery in thinking about scarlet experience. This hypothesis aligns with more general accounts of concept mastery, which often analyze mastery in terms of the endorsement or recognition of certain beliefs or inferences:²⁸ if

²⁷ See Burge [1979] and Peacocke [1992] for some classic discussions pertaining to concept mastery. See Rabin [2020] for a recent discussion. For discussions of mastery for phenomenal concepts, see Ball [2009, 2013], Rabin [2011], and Alter [2013]. Note, though, that these discussions mostly focus on the ramifications of concept mastery for the knowledge argument, rather than on the kinds of issues addressed in this paper.

²⁸ See Rabin [2020].

one's phenomenal concept doesn't yield exact knowledge of what it's like to have a target experience, then it's plausible that one's phenomenal concept won't permit (or enable) one to endorse (or recognize) the beliefs or inferences that are diagnostic of mastery. By contrast, it's hard to see where to draw the line if we were to reject maximal purity as a requirement for mastery. It's plausible that at least some knowledge of what it's like to have an experience is necessary for mastery in thinking about that experience. But once we accept that some purity is needed, there seems no principled cutoff short of maximal purity.

The notion of concept mastery is useful for clarifying the explanatory ambitions of this paper. The degreed picture can be understood as providing an account of how phenomenal concepts yield phenomenal knowledge at all levels of mastery (rather than just maximal levels). In fact, I suspect that one reason that the degreed picture has been underexplored is because philosophers working on phenomenal concepts tend to focus on idealized subjects who already have concept mastery. This hypothesis is supported by the fact that the philosophical literature on phenomenal concepts tends to adopt the mental representations framework of concepts (which tends to elide issues about concept mastery, as noted above). If we were concerned only with subjects who have achieved concept mastery, then the all-or-nothing picture might be viable. But once we expand the scope of the target explanandum, the degreed picture is needed to account for the full range of cases.

A noteworthy consequence concerns *revelation*, the thesis that possession of a phenomenal concept enables one to know the essence of the target experience.²⁹ Suppose we grant that the essence of an experience is simply what it's like to undergo that experience (or the set of all phenomenal facts about that experience). If we consider only idealized subjects that have mastery over all their concepts, then revelation may look plausible. But once we adopt the degreed picture—and consider also subjects who haven't achieved

²⁹ See Nida-Rumelin [2006], Goff [2015], and Broi [2020] for some recent discussions of revelation.

mastery in thinking about experiences—revelation looks less appealing. Just because one possesses a phenomenal concept of an experience x doesn't mean that one knows exactly what x is like. And if one doesn't know exactly what x is like, then it's plausible that one doesn't know the essence of x . Therefore, while revelation might turn out to be true for the special class of maximally pure phenomenal concepts, it's false for all other phenomenal concepts (and thus false simpliciter).

Reference

A popular idea in the phenomenal concepts literature is that phenomenal concepts refer to target experiences “directly via phenomenal character.” The idea is that the way that a phenomenal concept represents what it's like to undergo its target experience suffices for determining reference to a particular target experience. As examples, Chalmers [2003] says a phenomenal concept picks out its referent “directly, in terms of its intrinsic phenomenal nature,” Tye [2003] says “phenomenal concepts refer directly” in that they “have no associated reference-fixers, no descriptive content at all,” and Papineau [2007: 104] says “phenomenal concepts refer to phenomenal properties directly, and not by invoking any further contingent properties of those referents.”

These claims are in tension with the degreed picture. In order for these sorts of claims to be plausible, it would have to be the case that phenomenal concepts are always maximally pure, meaning they specify exactly what their target experiences are like. This is because any phenomenal concept that isn't maximally pure leaves open multiple phenomenal possibilities. Since phenomenal possibilities are candidates for what it's like to undergo target experiences, non-maximally pure phenomenal concepts leave open multiple candidates what it's like to undergo target experiences. By consequence, the way that a non-maximally pure phenomenal concept represents what it's like to undergo its target experience cannot suffice to determine which target experience is the referent of that phenomenal concept.

To illustrate, consider again what it's like to see scarlet, and then consider what it's like to see vermilion (which is very similar to what it's like to see scarlet). Speaking for myself, it's not clear there's any difference between how my concept SCARLET EXPERIENCE characterizes what it's like to see scarlet vs. how my concept VERMILLION EXPERIENCE characterizes what it's like to see vermilion. If we were to test my recognitional, imaginative, and inferential abilities, it's not clear that such tests would reveal any difference at all in how I think about what it's like to see scarlet versus what it's like to see vermilion.³⁰ Yet I've argued that I nevertheless have distinct phenomenal concepts of each experience: my concept SCARLET EXPERIENCE refers to scarlet experience (and enables me to think about what it's like to see scarlet), and my concept VERMILLION EXPERIENCE refers to vermilion experience (and enables me to think about what it's like to see vermilion). This means that there must be some other factor that contributes to determining which target experience a phenomenal concept refers to.

In fact, even maximally pure phenomenal concepts leave open multiple possibilities for their target experiences. Recall that phenomenal concepts can refer to either phenomenal properties or to particular experiences. Suppose one has a maximally pure phenomenal concept. This means that the phenomenal concept enables one to know exactly what its target experience is like. But there would remain the question of whether the phenomenal concept refers to a particular experience or to a maximally determinate phenomenal property. And even if we were to set aside phenomenal properties and focus only on particular experiences, it's possible for there to be distinct particular experiences that are phenomenally identical. These observations indicate that the ways that phenomenal concepts represent what it's like to

³⁰ This doesn't mean the concepts are identical. My claims concern only the ways that phenomenal concepts represent *what it's like to undergo their target experiences*. This leaves open the possibility that phenomenal concepts also have other features that differentiate them from one another: for example, perhaps my concept SCARLET (versus VERMILLION) enables me to know (*de dicto*) that scarlet (rather than vermilion) experience is normally caused by scarlet (as opposed to vermilion) color chips.

undergo their target experiences invariably underdetermine reference to a particular target experience.

To determine the target experience of a phenomenal concept, we need to identify some factor besides the way that the phenomenal concept represents what it's like to undergo its target experience. The natural move is to look at the kinds of referential mechanisms that we take to apply to other natural kind concepts: for example, definite descriptions, speaker intentions, causal chains, demonstrative acts, deference to experts, rules of use, or some combination thereof. There are interesting questions about which of these referential mechanisms are relevant here. But the questions that arise here are familiar, and I suspect that the answers will depend on more general issues about how concepts refer (rather than on issues idiosyncratic to phenomenal concepts). Given this, I won't attempt to evaluate which of those factors is or isn't relevant.³¹

I've argued that the degreed theory casts doubt on the audacious claim that phenomenal concepts refer to target experiences solely on the basis of how they represent what it's like to undergo the target experiences. But the degreed theory remains compatible with the less audacious claim that the referential mechanisms of phenomenal concepts differ from the referential mechanisms of other natural kind concepts. More specifically, a degreed theorist might think that the way phenomenal concepts represent what it's like to undergo their target experiences *constrains* (rather than determines) reference, meaning that target experience of a phenomenal concept must be amongst the phenomenal possibilities left open by the phenomenal concept.

Suppose, for example, that a phenomenal concept A leaves open phenomenal possibilities *x*, *y*, and *z*. I've argued that the way that A represents what it's like to undergo its target experience leaves open whether *x*, *y*, or *z* is in fact the target experience. But this is compatible with holding that one

³¹ See Michaelson & Reimer [2019] for general discussion of theories of reference. See Ball [2009] and Rabin [manuscript] for more detailed discussion of how these kinds of kinds of referential mechanisms can be applied to phenomenal concepts.

of x , y , or z *must* be the target experience. On this view, the phenomenal possibilities ruled out by a phenomenal concept culls the initial candidates for target experiences, while the referential mechanisms mentioned above secure reference to a particular target experience amongst those candidates.³²

This means that while the degreed picture undermines the claims mentioned earlier about how phenomenal concepts refer, it remains compatible with a more modest view that's similar in spirit. Instead of thinking that the way that phenomenal concepts represent what it's like to undergo their target experiences *determines* reference to a target experience, we might instead think that the way that phenomenal concepts represent what it's like to undergo their target experiences *constrains* reference to a target experience. If we accept this claim, then we generate systematic connections not only between (1) the degree of purity of a phenomenal concept and (2) the exactness of the phenomenal knowledge yielded by that phenomenal concept, but also (3) the degree to which the phenomenal possibilities left open by a phenomenal concept constrains the candidates for target experiences.

Conclusion

This paper has argued that knowledge of what it's like to have an experience varies along a spectrum from the more exact to the more approximate. I motivated the degreed picture by appeal to (1) limits in epistemic abilities such as recognition, imagination, and inference, and (2) the semantics of 'knows what it's like' expressions. I argued that purity is independent of both determinability and vagueness. I explained how the structure of purity can be systematized by identifying the degree of purity of a phenomenal concept as a matter of the proportion of phenomenal possibilities ruled out by that phenomenal concept. And I discussed some implications of the degreed picture

³² Whether this picture is plausible turns on whether there can be mismatches between what the target experience is like and what the target experience is represented as being like. This depends on some tricky questions about whether alleged cases of mismatch are really cases of reference failure (akin to concepts with inconsistent contents, such as SQUARE CIRCLE).

for questions concerning what it takes to possess a phenomenal concept, what it takes to master a phenomenal concept, and the referential mechanisms of phenomenal concepts.

The result is a richer picture of what we can know about what it is like. Even if our knowledge of phenomenal character will always be approximate, our knowledge of phenomenal knowledge can become increasingly exact.³³

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