
Objective Phenomenology

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Abstract:

This paper examines the prospects for *objective phenomenology*, or a way of understanding the phenomenal character of conscious experiences that does not require one to have had the kinds of experiences under consideration. My central thesis is that *structural facts* about experience—facts that characterize how conscious experiences are structured—are objective phenomenal facts. I begin by precisifying the idea of objective phenomenology and diagnosing what makes any given phenomenal fact subjective. Then I defend the view structural facts about experience are objective. I also argue that structural facts about experience, despite being objective, nevertheless give still rise to an explanatory gap.

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Introduction

This paper examines the prospects for *objective phenomenology*, or a way of understanding the phenomenal character of conscious experiences that does not require one to have had the kinds of experiences under consideration. My central thesis is that *structural facts* about experience—facts that characterize how conscious experiences are structured—are objective phenomenal facts.

The idea of an objective phenomenology comes from an enigmatic remark from Thomas Nagel:

Setting aside temporarily the relation between the mind and the brain, we can pursue a more objective understanding of the mental in its own right ... This should be regarded as a challenge to form new concepts and devise a new method—an objective phenomenology not dependent on [taking up the point of view of the experiential subject] ... Though presumably it would not capture everything, its goal would be to describe, at least in part, the subjective character of experiences in a form comprehensible to beings incapable of having those experiences.

—Thomas Nagel, “What is it like to be a bat?” [1974]

Though Nagel’s remark is well-known, there has been little work directly addressing the question of objective phenomenology.¹ In fact, Nagel himself said that it is “difficult to understand what could be meant by the objective character of an experience.” A common sentiment is that an objective phenomenology, though an intriguing idea, is either incoherent or impossible.

In §1, I precisify the core issue of this paper. In §2, I provide a diagnosis for why certain kinds of phenomenal facts are subjective. In §3, I defend the view that structural facts are objective phenomenal facts.² I also argue that structural facts, despite being objective, nevertheless give still rise to an explanatory gap.

¹ Atkins [2013] discusses the idea of objective phenomenology within a Peircean framework and Mensch [2000] discusses the idea of an objective phenomenology within a Husserlian framework, and Johnston [2007] argues that the contents of minds are objective modes of presentation. However, my aims are quite different from the aims of these other projects.

² Nagel [1974, p. 449] hints at this idea when he says that “structural features of perception might be...accessible to objective description, even though something would be left out.”

§ 1 | Objectivity

The idea of objective phenomenology is somewhat obscure. To evaluate the idea rigorously, we need to take Nagel's core ideas and develop them into a more precise form. Doing so will enable us to both better understand what an objective phenomenology would be and to better assess its prospects.

We can begin with some basic examples to demarcate the objective and the subjective. There are some facts about other creatures that we are in a position to understand, such as facts about behavior, function, and physiology. In the case of bats, these might include facts about flight and feeding behavior, about how their biological systems work, and about the structure of their anatomy. These are amongst the facts that Nagel calls *objective*.³ Other paradigmatic examples of objective facts include mathematical facts, such as $e^{i\pi} + 1 = 0$, and physical facts, such as water is H₂O. There are also facts about other creatures that it seems we could never understand: in particular, certain facts about what it is like to be those creatures. In the case of bats, these might include facts about what it is like to echolocate. These are amongst the facts that Nagel calls *subjective*. Other paradigmatic examples of subjective facts include the fact that phenomenal red feels like *this* or the fact that pain feels like *that*.

As Nagel famously pointed out, phenomenal facts seem to necessarily lie on the on the subjective side.⁴ It is hard to see how we could understand facts about what it is like to have bat experiences unless we were to occupy the point of view of a bat, or at least a subject that could have sufficiently similar experiences. More empirical investigation or theoretical analysis seems of little help; instead, it seems that the very way that we are built precludes us from understanding such facts. The

³ The term 'objective' has many uses in philosophy, not all of which align with the usage here. Two other senses of objectivity include *alethic* objectivity (where objective facts are those whose truth-conditions are independent of our propositional attitudes) and *ontological* objectivity (where objective facts are facts about non-experiential domains).

⁴ Note that in order to count as a phenomenal fact, a fact must not only be about an experience, but must also characterize what it is like to have that experience. For example, the fact that some particular experience is made of atoms (assuming physicalism is true) is a fact about an experience (but is not a phenomenal fact).

question of objective phenomenology is whether it is possible to understand the phenomenal character of experiences without occupying a point of view that enables one to have those experiences.

Before moving forward, let me address a preliminary worry. Those sympathetic to physicalism might wish to say that phenomenal facts just are physical facts. But for our purposes, talk of facts should be understood to mean talk of true propositions (rather than states of affairs).⁵ For physicalists who prefer not to frame the discussion in terms of facts, we could instead frame the discussion in terms of propositions, concepts, or modes of presentation. So long as one accepts the aforementioned asymmetries between what we could understand about the experiences of other creatures and what we could understand about domains such as the external world, we can examine the issue of objective phenomenology.⁶

To address the issue, we first need a more precise characterization of objectivity. Here is an initial analysis, following the language of Nagel: a fact is *objective* just in case it is understandable from any point of view, and a fact is *subjective* just in case it is understandable only from particular points of view. Let me explain this initial analysis in more detail.

A *point of view* may be understood as a set of experiential capacities. Every subject has certain experiential capacities, which determine which experiences that subject could have. For example, my experiential capacities enable me to experience seeing red, feeling pain, and smelling cinnamon, but they do not enable me to have rich echolocation experiences, or experiences of moving my seventh tentacle spirally, or of sensing a polarized magnetic field nearby. As a result of this, I am in a position to understand phenomenal facts about the former (but not the latter) kinds of experiences. Note that in the phrase ‘any point of view’, the quantifier scopes over all possible points of view (rather than only actual points of view) since which facts are objective does not depend on which subjects actually exist.⁷

To *understand* a fact is to grasp its content. A fact is understandable from a

⁵ My use of the term ‘fact’ also follows the terminology in Nagel [1974, 1986].

⁶ Most physicalists accept that there are such asymmetries. For others, the debate depends on more fundamental theoretical issues that cannot be addressed here.

⁷ This characterization of points of view aligns with those from Nagel [1974, 1986]. For other analyses of points of view (for different though related purposes), see McGinn [1983], Moore [1987], and Farkas [2008]. For a meta-analysis of points of view, see Biro [2006].

point of view just in case that point of view includes the experiential capacities needed to grasp that fact. If no particular experiential capacities are required for understanding a fact, then that fact is understandable from every point of view. Note that a fact might be understandable even if it is unknowable. For example, suppose that it is impossible to know whether the universe contains a prime number of electrons. Even so, we would still understand what it is for the universe to contain a prime number of electrons.⁸

Before moving on, let me address three objections to this initial analysis. The first objection is that this definition of 'objective' renders the existence of objective phenomenal facts trivial. Against this, note that this analysis of 'objective' is compatible with many phenomenal facts being subjective. In fact, in §2 I will discuss in detail why many phenomenal facts do not satisfy the conditions for objectivity. If anything, this characterization of objectivity brings to light the paradoxical nature of objective phenomenology: an objective phenomenal fact is a fact about the phenomenal character of experiences that does not require any particular set of experiential capacities to understand. In general, the analysis above aims to characterize objectivity in a way that is precise, interesting, and that aligns with the discussions from Nagel.⁹

The second objection is that points of view may also be individuated by non-experiential factors, such as cognitive capacities. Though there are many ways of individuating points of view, the analysis relevant to objective phenomenology requires abstracting away from non-experiential factors. Consider how a shrimp lacks the cognitive capacities required to understand facts about special relativity, but that does not make facts about special relativity subjective. Similar kinds of considerations apply to other kinds of factors, such as environmental or indexical factors. If objectivity depended upon factors such as cognitive capacities, then no

⁸ Nagel [1974, p. 441] makes a similar point: "[T]here are facts which humans never will possess the requisite concepts to represent...But one might also believe that there are facts which could not ever be represented or comprehended by human beings...simply because our structure does not permit us to operate with concepts of the requisite type."

⁹ See Nagel [1974, p. 438-443] and [1984, Ch. 1-3] for his discussions of objectivity. This paper's analysis also aligns well with the characterization in Howell [2007, p. 149], who says that "an objective theory of a particular type of experience cannot require that one have a token of that type of experience in order to completely understand it."

domain of facts whatsoever would count as objective, since for any fact there would be some creatures that lack the cognitive capacities required to understand that fact. To develop an interesting notion of objectivity that yields the right predictions about paradigmatic examples, we must abstract away from non-experiential factors.

The third objection is that understanding itself requires certain experiential capacities. Suppose, for example, that all understanding requires a capacity for cognitive phenomenology. Then that would mean that no facts are objective, since every fact would be understandable only from points of view that enable cognitive experiences. The issue here may be partly verbal. Even if there is a form of understanding that requires having certain kinds of experiential capacities, there is arguably also a form of understanding where even philosophical zombies can understand various kinds of facts. But even if one denied this last point, we could adopt a more restricted characterization of ‘objective’, where a fact is objective just in case understanding that fact does not require being able to instantiate any phenomenal properties predicated by that fact. In light of this, I think even theorists who think that understanding requires certain kinds of experiential capacities will find interest in this paper.

To summarize: a fact is objective just in case it is understandable given any point of view, where points of view are sets of experiential capacities and where understanding a fact consists in grasping its content. Now we can turn to our principal question: are there objective phenomenal facts?

§ 2 | Subjective Facts

There are indeed objective phenomenal facts—or so I shall argue. But first, I want to examine what makes any given phenomenal fact subjective. Diagnosing the source of subjectivity will set the stage for understanding why some phenomenal facts are objective.

Phenomenal Concepts

To understand a phenomenal fact, one must possess *phenomenal concepts*, or concepts of experiences that enable one to think about what it is like to have those experiences. For example, when I think about what it is like to feel pain, I deploy the phenomenal concept PAIN. For the purposes of this paper, I will take for granted that concepts are mental representations that are the constituents of thoughts and that

are used to grasp propositions.¹⁰

In §1, I characterized objectivity as a property of facts, but the notion of objectivity may also be extended to concepts. Let us say a concept is *objective* just in case it is acquirable from every point of view, and *subjective* just in case it is acquirable only from particular points of view. Since understanding phenomenal facts requires possessing phenomenal concepts, it is natural to think that the subjectivity of phenomenal facts derives from the subjectivity of phenomenal concepts. If this is the case, then we should expect the limits in understanding phenomenal facts to be explainable by limits in the acquisition of the phenomenal concepts needed to grasp those facts.

This hypothesis is supported when we consider which methods enable one to acquire phenomenal concepts. The most obvious method is introspection: for example, one might acquire a phenomenal concept of pain by introspecting one's own pain experiences. We need not assume that one can form a phenomenal concept of every kind of experience one can have: for example, perhaps one cannot form phenomenal concepts that pick out certain experiences at the periphery of attention. But even if that is the case, it is uncontroversial that one can form phenomenal concepts for many of the experiences one can introspect. Since any experience that one introspects is an experience that one actually undergoes, the set of phenomenal concepts acquirable through introspection for a subject will correspond to a subset of the experiences associated with the point of view of that subject.

On some views, introspection puts us in contact only with particular experiences, rather than with phenomenal properties. Nevertheless, one can *abstract* from those particular experiences to acquire concepts for the phenomenal properties that characterize those experiences. For example, by introspecting a phenomenal red experience, not only can one form a particular phenomenal concept of that particular phenomenal red experience, but also a universal phenomenal concept of

¹⁰ The main alternative theory takes concepts to be abstract entities (rather than mental representations) and the constituents of propositions (rather than thoughts). See Margolis & Laurence [2014] for a recent overview of theories of concepts. See Chalmers [2003] and Papineau [2006] for some discussions of phenomenal concepts. Recently, Ball [2009] has argued that social externalist considerations show that there are no concepts whose acquisition conditions require one to have had certain experiences, though see Rabin [2011] and Alter [2013] for counterarguments.

phenomenal red. In general, our capacity for abstraction enables us to form concepts for the types that particular experiences fall under. Of course, there are limits to our abstraction abilities, but it is plausible that these are due to limits in our cognitive capacities, rather than our experiential capacities. Otherwise, we would have to deny the conditional that if a subject can have experiences that instantiate a phenomenal property, then that subject has the experiential capacities needed to acquire phenomenal concepts of that phenomenal property.

Are there methods that enable one to acquire phenomenal concepts for experiences one has never had? I can see two candidates. The first is *extrapolation*, whereby we form phenomenal concepts of phenomenal properties that lie along the same dimensions as those represented by our prior phenomenal concepts. For example, even if one has never visually experienced the missing shade of blue, one might be able to extrapolate from one's phenomenal concepts of other phenomenal blue experiences to form a phenomenal concept of the missing shade of blue experience. The second method is *recombination*, whereby we recombine concepts for basic experiences we have had into a concept for a more complex experience we have not had. For example, even if one has never had the experience of eating watermelon while smelling cinnamon, one might be able to recombine one's prior phenomenal concepts for each individual experience to acquire a phenomenal concept for the complex experience.

The methods we have identified are introspection, abstraction, extrapolation, and recombination. As far as I know, there are no other compelling candidates. But it is plausible there are limits to the methods we have identified. Even if a subject had perfect introspective, abstraction, extrapolatory, and recombinatory capacities, it is unlikely that they would be able to acquire phenomenal concepts for experiences radically different from their own. This is evident when we think about the nature of these four methods: introspection and abstraction are limited to experiences one has had, extrapolation is limited to dimensions of experience one already has phenomenal concepts for, and recombination is limited to complex experiences whose constituents one already has phenomenal concepts for. But there are plausibly experiences we have never had that instantiate fundamentally different phenomenal qualities, rather than just different values along the same dimensions or different combinations of the same constituents. Perhaps some of the most exotic experiences of bats or octopuses fall

within this category. If that is the case, then it is plausible there are restrictions on which phenomenal concepts are acquirable by any given point of view.¹¹

Let me recap the reasoning in this section. We started with the observation that many phenomenal facts are subjective. A hypothesis was that subjectivity of phenomenal facts is explained by subjectivity of the phenomenal concepts needed to understand those facts. This led to the question of which methods enable one to acquire phenomenal concepts, and the best candidates were introspection, abstraction, extrapolation, and recombination. All of these methods are arguably limited. This means that for any point of view, only a limited range of phenomenal concepts are acquirable: namely, phenomenal concepts for experiences that one has had (via introspection and abstraction) or for experiences that are sufficiently similar (via extrapolation and recombination). The limits in these methods corroborates the hypothesis that the subjectivity of phenomenal facts is explained by the subjectivity of phenomenal concepts. Furthermore, this reveals one of the challenges in arguing for the possibility of an objective phenomenology: in order for there to be objective phenomenal facts, there must be at least some phenomenal concepts that are acquirable from any point of view. I will soon argue directly for this in §3.

Degrees of Objectivity

Before moving on to the objective phenomenal facts, it is worth taking a brief detour to examine degrees of objectivity. Our focus so far has been on *perfect objectivity*, or on whether a fact is understandable from every point of view. But objectivity can also be understood as coming in degrees: a fact is *more objective* when it is understandable from a greater range of points of view.¹² For example, phenomenal facts about experience itself are intuitively more objective than phenomenal facts about red³⁴ experience. This raises a new question: what makes a phenomenal fact more or less objective?

¹¹ This echoes Nagel [1974] when he says that “if extrapolation from our own case is involved in the idea of what it is like to be a bat, the extrapolation must be incomplete.”

¹² Nagel [1986] also draws this distinction when he says, “Though I shall for convenience often speak of two standpoints, the subjective and the objective...the distinction between subjective and objective views is really a matter of degree...” When I use the term ‘objectivity’ without qualification, I will always mean perfect objectivity.

Here is a conjecture that seems plausible (but which I will argue is false): degree of objectivity corresponds to degree of *generality*. A phenomenal fact is more *general* when it predicates properties instantiated by a wider range of possible experiences, and more *specific* when it predicates properties instantiated by a narrower range of possible experiences. For example, a maximally specific phenomenal fact might predicate the maximally determinate phenomenal property characterizing your current total experience, while a maximally general phenomenal fact might predicate only the phenomenal property of experience itself.

It is tempting to think that generality correlates with objectivity. Since general facts predicate properties instantiable by a wide range of points of view, there are many points of view that have the experiential capacities required for understanding those facts. And since specific facts predicate properties instantiable by a narrow range of points of view, there are few points of view that have the experiential capacities required for understanding those facts. Hence the conjecture: the more general a fact (the greater the range of experiences that instantiate the properties predicated by the fact), the more objective (the greater the range of points of view from which that fact is understandable).

Surprisingly, there are counterexamples to this conjecture. In the next section, I will argue that generality and objectivity come apart when we consider structural facts about experience. Nevertheless, although the conjecture is false for phenomenal facts in general, it is true if our concern is restricted to phenomenal facts that concern only the qualitative character (as opposed to the structure) of experiences. In other words, there is in fact a systematic link between specificity and objectivity, but only when we set aside structural properties.

§ 3 | Structural Facts

The rest of this paper defends and explores my core thesis: that structural facts about experiences are (perfectly) objective phenomenal facts.¹³

¹³ Outside of analytic philosophy, some intellectual traditions that have addressed related issues concerning the structure of experience include early psychophysics (e.g., Fechner [1860]), phenomenology (e.g., Husserl [1913]), and logical positivism (e.g., Carnap [1928]).

Structure

Structural facts are facts that characterize how conscious experiences are structured. More precisely, structural facts ascribe two kinds of properties: first, the property of experience itself, and second, purely structural properties. In doing so, structural facts carry information about what it is like to have an experience, but not by ascribing specific qualitative properties like phenomenal red, pain, and so forth. Instead, structural facts specify how the phenomenal character of an experience is structured while abstracting away from the experience's particular qualities.

Over the rest of the paper, whenever I use the term 'structural fact' without qualification, I will mean facts that satisfy the definition above. In some instances, however, it will be useful to also talk about facts that specify the structures of physical or mathematical objects. In these contexts, I will distinguish 'structural facts about experiences' from 'structural facts about x ' (where x is some non-experiential domain, such as physical objects). Otherwise, the term 'structural fact' may always be read as shorthand for 'structural fact about experience'.

It is hard to identify uncontroversial examples of structural facts, in large part because there is little consensus on which kinds of structural properties experiences actually have. But consider the kinds of facts expressed by sentences like the following: experience x is a part of experience y , the magnitude of experience x along dimension N is twice the magnitude of experience y along dimension N , the similarity relations between the set of experiences $x_1 \dots x_n$ can be modeled by points in a space S with metric function d , the phenomenal character of experiences of kind K can be modeled using bounded, continuous three-dimensional affine spaces.

What exactly do I mean by structure? In my view, there is no analysis of STRUCTURE in terms of more fundamental concepts.¹⁴ But we can still substantiate the concept via maxims and examples. In terms of maxims, structure is that which is directly captured through formal representations, such as mathematical models; structure is purely about how things relate to each other, rather than what those particular things are; structure is form, rather than substance; and structure abstracts from the qualitative. In terms of examples, some exemplars of structural concepts include NUMBER, PART, MAGNITUDE, and DIMENSION. Other candidates that are somewhat more contestable include nomic, metaphysical and informational

¹⁴ Note that this does not mean that structural facts themselves are fundamental.

concepts, such as CAUSE, SPACE, NECESSITY, SIMILARITY, and ENTROPY.¹⁵ As a general heuristic, I will presume that any features of a phenomenon that can be directly captured through formal models of that phenomenon are structural features.

My focus is on structural facts that characterize what it is like to have an experience. Note that not every fact that ascribes structural properties to experiences satisfies this criterion. Consider the fact that experience x is identical to itself, or that there is at least one experience, or that experience x has part p (where p is not itself an experience). Though these facts deploy only structural concepts and the concept EXPERIENCE, they arguably do not provide any information about what it is like to have those experiences. In light of this, the necessary claim I used to characterize structural facts (namely, that all structural facts ascribe purely structural properties to experiences) should not be confused with the corresponding (and more dubious) sufficient claim (namely, that all facts that ascribe structural properties to experiences characterize what it is like to have that experience).

Perhaps the best examples of structural facts about experience come from *quality-space models*, or formal models that represent classes of mental qualities via points in multidimensional spaces.¹⁶ The most well-known quality-space model is the three-dimensional color solid (with hue, saturation, and brightness as dimensions), which specifies the similarity and magnitude relations between different color qualities. Imagine that we extricate all the qualitative content from a quality-space model for colors, so that all we are left with is the formal structure (along with the specification that this is a model that characterizes the phenomenal characters of some domain of experiences). For example, suppose that we have a formal structure specified by a set of points and a metric that specifies distances between points. This formal structure leaves open all facts about the qualitative character of color experiences (aside from them being experiences), yet it still

¹⁵ There are also concepts for higher-order phenomenal properties, such as INTENSITY, CENTRALITY, SALIENCE, and PRECISION. I am inclined to think these are not purely structural concepts, though there is room for debate. For discussion of centrality structure and salience structure, see Watzl [2017]. For discussion of precision structure, see Block [2015].

¹⁶ See Clark [2000], Rosenthal [2010], and especially Lee [forthcoming] for discussions of quality-space models. Notably, each of these authors considers the claim that mental quality-spaces are isomorphic to physical quality-spaces, a claim that requires attributing the same structural properties to both experiential and non-experiential domains.

describes the phenomenal character of color experiences. If we were to learn that that formal structure accurately modeled the color experiences of octopuses, or the echolocation experiences of bats, or the electromagnetic experiences of aliens, then we would learn something about the phenomenal character of those experiences. Of course, such a formal model could not capture everything about what it is like to have the experiences it represents. But that is compatible with my claims, since I am arguing only that a special class of phenomenal facts is objective (rather than that all phenomenal facts are objective).

How do structural facts about experience relate to *qualitative facts*, or facts about the qualitative character of experience? It is plausible that structural facts are often grounded in qualitative facts: for example, consider how the structural relations between color experiences are explained by the qualitative characters of color experiences. But this should not be taken to mean that structural facts are themselves qualitative facts. Consider, by analogy, how macrophysical facts are grounded in microphysical facts even though macrophysical facts are not themselves microphysical facts. In fact, I will soon argue that even though structural facts characterize the phenomenal characters of experiences, the structural properties ascribed by structural facts about experience can also be instantiated by non-experiential things. A surprising consequence will be that even though structural properties can characterize what it is like to have an experience, structural properties are not phenomenal properties.

Let us move on now to the objectivity of structural facts. As mentioned, structural facts predicate only structural properties and the property of being an experience. This means that to understand a structural fact, one must be able to acquire two kinds of concepts. The first consists of the structural concepts mentioned above, such as NUMBER, PART, MAGNITUDE, DIMENSION, and so forth. The second is the phenomenal concept EXPERIENCE. Consequently, establishing that structural facts are objective requires arguing for two claims: first, that EXPERIENCE is objective, and second, that structural concepts are objective.

Objective Concepts

Why does understanding a structural fact require deploying the concept EXPERIENCE? Some might contend that we should be concerned only with *pure structural facts*, or facts that predicate only structural properties (and not the

property of experience itself). But arguing that pure structural facts are objective would establish nothing about objective phenomenology, since pure structural facts are not phenomenal facts.¹⁷ Since our concern is with phenomenal facts (rather than facts about pure structure), the relevant facts are those that specify that the objects they refer to are experiences. Without this requirement, the facts that we consider may as well denote physical or abstract objects (rather than experiences).

Is the concept EXPERIENCE objective? At first blush, the previous arguments concerning the subjectivity of phenomenal concepts might seem to be in tension with taking EXPERIENCE to be objective. However, the previous section provided a diagnosis of why any given phenomenal concept is subjective, rather than an argument that all phenomenal concepts are subjective. The diagnosis was that acquiring phenomenal concepts requires introspection, abstraction, extrapolation, or recombination, and that one's experiential capacities constrain which phenomenal concepts one could acquire. This is compatible with thinking that some phenomenal concepts are nevertheless acquirable from all points of view.

In fact, EXPERIENCE is a special case, since it is the maximally general phenomenal concept. Since every point of view must have some experiential capacities, there is no point of view that lacks the experiential capacities required to acquire EXPERIENCE. This does not mean that every subject actually possesses the concept or even that every subject could acquire the concept, but it does mean that every subject has the experiential capacities needed to acquire the concept. So even though EXPERIENCE is a phenomenal concept, it is nevertheless objective.

What about structural concepts? Towards the beginning of this paper, I mentioned that the paradigm examples of objective facts are mathematical and physical facts.¹⁸ Since these kinds of facts often require structural concepts to understand, the objectivity of structural concepts is at least as secure as the objectivity of the kinds of facts that we used to characterize the very notion of

¹⁷ By similar lights, structural concepts are not phenomenal concepts (since they do not attribute any phenomenal properties) and structural properties are not phenomenal properties (since they need not involve any phenomenal component).

¹⁸ For example, Nagel [1974] says that facts about the physical function of a creature are "objective facts *par excellence*..." In fact, at some points Nagel seems to regard mathematical and physical facts not only as paradigm examples of objective facts, but as partly fixing reference to which property the term 'objective' denotes.

objectivity in the first place. Of course, for any structural concept, there will be many subjects that will be unable to acquire that concept. But this is plausibly due to the kinds of cognitive limits that prevent one from understanding mathematical and physical facts, rather than the experiential limits that prevent one from acquiring certain phenomenal concepts.

Recall from earlier that when a phenomenal fact is subjective, it is because there are special experiential constraints on acquiring the phenomenal concepts needed to understand that phenomenal fact. For any point of view, a base set of phenomenal concepts is acquirable through introspection and an expanded set through abstraction, extrapolation, and recombination. By contrast, there do not seem to be special experiential constraints for the acquisition of structural concepts. In other words, the explanation for why phenomenal concepts are subjective does not generalize to structural concepts.

In response, one might appeal to the idea that acquiring a structural concept requires one to have had an experience instantiating the corresponding structural property. For example, perhaps acquiring the concept PART requires one to have had an experience that instantiates parthood structure. However, the general principle behind this claim is dubious. Consider how humans can acquire the concepts UNCOUNTABLE INFINITY, IMAGINARY NUMBER, and TRILLION-DIMENSIONAL SPACE, even though it is unlikely that human experiences instantiate the structural properties denoted by those concepts.

Might one argue that the structural concepts that I am talking about are phenomenal concepts in disguise? Suppose, for example, that the kinds of spatial properties characterizing spatial experience are fundamentally different from the kinds of spatial properties characterizing physical space. This might tempt one to think that structural concepts that can be applied to experiences are fundamentally different from structural concepts that can be applied to physical phenomena. However, that conclusion does not follow from that premise. To see why, consider how we could still ask whether spatial experience and physical space have the same kind of structure. For example, we might wonder whether both spatial experience and physical space are best modeled using metric (as opposed to, say, topological) spaces. Such questions are sensible because it might be the case that spatial experience and physical space share some structural properties. But that means that the structural concepts that can be applied to experiences are the same as the

structural concepts that can be applied to physical phenomena.

In fact, we need not rely on hypothetical cases to illustrate this point. Consider again quality-space models. A striking fact about these models is that the same formal structures can be used to represent either the structures of experiences (e.g., color experiences) or the structures of external objects (e.g., colors). Consequently, the kinds of structural properties captured by quality-space models are shared between color experiences and colors themselves. And even if it had turned out that experiences instantiate fundamentally different structural properties than any physical phenomena, the mere fact that we can entertain these kinds of hypotheses indicates that the kinds of structural concepts we apply to experiences are the same as the kinds of structural concepts we apply to other kinds of things. Putting it another way, structural concepts are topic-neutral concepts that can be applied to all sorts of phenomena: phenomenal, physical, abstract, and so forth.

The claim that structural facts are objective is also supported by intuitions about cases. While humans cannot understand most phenomenal facts about bat, octopus, or alien experiences, it is intuitively plausible that we could understand structural facts about such experiences. If we were told that the echolocation experiences of bats have a certain kind of parthood structure, that the sensory experiences of octopuses have a certain number of dimensions of variation, or that similarity relations between alien experiences are captured by a particular quality-space model, we would be in a position to understand those facts.¹⁹

From this point onwards, I will take for granted that structural facts are objective. In what follows, I will address two worries about the significance of this conclusion: the first worry is that structural facts are insignificant, and the second worry is that structural facts are not genuinely phenomenal facts.

Significance

Some might agree that structural facts are objective but question the significance of this conclusion. Perhaps after we extricate all qualitative content from

¹⁹ Nagel [1974] makes a suggestion in the same spirit when he says that “concepts alternative to those we learn in the first person may enable us to arrive at a kind of understanding even of our own experience which is denied us by the very ease of description and lack of distance that subjective concepts afford.”

the facts under consideration, what we are left with is too impoverished to be worth caring about. Or perhaps what we care about in investigating experience is only knowledge of qualitative character, rather than knowledge of structure.

To see why structural facts are significant, consider first a specific example: color experiences. As mentioned, human color experiences can be represented using a three-dimensional quality-space model, where each point in the space corresponds to a specific color experience, distance in the space corresponds to degree of similarity, and the range of instantiable color experiences forms a bounded asymmetrical shape. By developing such a model, we acquire not only piecemeal knowledge of specific color qualities, but also systematic knowledge of how those color qualities relate to each other. If we were to learn that other creatures (such as butterflies or mantis shrimp) have color experiences with different structural properties, we would enrich our knowledge of the experiences of those creatures, even if we remained ignorant of the qualitative character of those experiences.

At this point, it is worth returning to the previous discussion of generality versus specificity. As a reminder, a phenomenal fact is more *general* when it predicates properties instantiated by a wider range of possible experiences, and more *specific* when it predicates properties instantiated by a narrower range of possible experiences. We are now in a position to see why our previous conjecture linking objectivity to generality is false when applied to all phenomenal facts (even though it is true when restricted to phenomenal facts that predicate only qualitative properties). Some structural facts are highly specific, in that they predicate structural properties that characterize only a narrow range of experiences. But since structural facts are objective, even the most specific structural facts would still be perfectly objective. Consequently, specific structural facts provide a counterexample to our previous conjecture linking objectivity with generality. On top of that, this observation demonstrates in another way why structural facts are substantive: every structural fact with even a minimal degree of specificity provides information about the phenomenal character of the target experience, in the sense of eliminating possibilities about what the experience is like.

The significance of structural facts about experience is also evident when we consider structural facts about the physical world. Most theorists think that much of our knowledge of the physical world consists in knowledge of its structure, with some even arguing that structural facts comprise all of our knowledge of the

physical world. Yet almost everyone agrees that our knowledge of the physical world is substantive rather than impoverished.²⁰ By consequence, facts that are purely about the structure of a domain may still be substantive.

A final point: for the purposes of carving epistemic joints, I have focused on perfectly objective phenomenal facts. But for the purposes of actual inquiry into experience, we are likely to mostly be concerned with facts that have both structural and qualitative components. Only subjects that are inconceivably exotic (relative to our own point of view) would have experiences for which our understanding would be limited to only structural facts.

Phenomenality

Some might agree that structural facts about experiences are objective and significant but question whether structural facts are genuinely phenomenal facts. If structural facts do not count as phenomenal facts, then I have not actually made a case for objective phenomenology. Of course, this is partly a verbal issue about how we use the term 'phenomenal fact'. Nevertheless, there is good reason to think of structural facts about experiences as a species of phenomenal facts.

As an initial illustration for why it is intuitive that structural facts are phenomenal facts, consider again the analogy to structural facts about the physical world. Imagine someone who claims that we hardly learn any physical facts through scientific inquiry because we learn only about the structure of the physical world. That claim seems absurd: it is natural to think that structural facts about the physical world just are a kind of physical fact. By parity of reasoning, it is natural to think that structural facts about experience just are a kind of phenomenal fact.

It may be tempting to think that structural facts are not phenomenal facts because they do not ascribe phenomenal properties. After all, it seems tautological that phenomenal properties are the properties that characterize what it is like to

²⁰ A relevant worry is Newman's problem for structural realist theories in philosophy of science: if we understand structure in set-theoretic terms, where a structure consists of a domain of objects and a set of relations on those objects, then it seems that all we can glean from structural facts are facts about the cardinality of a domain. See Ainsworth [2009] for an overview of Newman's problem. See Frigg & Votsis [2011] for an overview of structural realism about the physical world.

have an experience, and I argued earlier that structural properties can be instantiated by all sorts of things. Now, this objection has a false premise: structural facts do ascribe a phenomenal property—namely, the property of being an experience. But even if we were to set that property aside, the objection still fails because it equivocates on the meaning of ‘phenomenal property’. If ‘phenomenal property’ means a property that *can* characterize the phenomenal character of an experience, then structural properties count as phenomenal properties (at least when they are instantiated by experiences). On the other hand, if ‘phenomenal property’ means a property that *must* characterize the phenomenal character of an experience (as is arguably more standard), then the reason for denying that structural facts are not phenomenal facts is defeated (at least once we recognize that structural properties can also characterize what it is like to have an experience).

Recall that I defined a ‘structural fact’ as a fact that characterizes how an experience is structured. This characterization is intended to demarcate structural facts from other kinds of facts that do not characterize what it is like to have an experience. These include (1) pure structural facts that predicate only structural properties (such as the fact that at least one thing exists), and (2) facts that ascribe structural properties to experiences but do not characterize what it is like to have the experiences (such as the fact that experience *x* has at least ten physical parts). Neither of these latter kinds of facts fall within the scope of what I claim to be the objective phenomenal facts; the former are not about experiences, and the latter do not characterize what it is like to have an experience.

This brings us to what I think is the most compelling reason for why structural facts are phenomenal facts: namely, that they characterize what it is like to have an experience. On any standard definition of ‘phenomenal fact’, satisfying this condition suffices for counting as a phenomenal fact. In objection, some might point out that no set of purely structural facts about experience can suffice to fully characterize what it is like to have an experience. But while that is true, it is also true that no set of facts purely about which phenomenal qualities are instantiated by an experience (such as the fact that an experience instantiates phenomenal red) can suffice to fully characterize what it is like to have an experience. To completely specify the phenomenal character of an experience, one must specify both which qualities are instantiated and how those qualities are structured. In my view, this suggests that the structural and the qualitative capture dual aspects of the

phenomenal character of experience.

The upshot is that structural facts about experiences are objective, significant, and phenomenal. In my view, this vindicates Nagel's speculative remark: there is a class of objective phenomenal facts.

The Structural Explanatory Gap

Structural facts about experiences are objective. But that does not mean that they are free from all of the challenges facing the investigation of consciousness. Despite their objectivity, structural facts about experiences still give rise to an explanatory gap.

The idea that there is an explanatory gap between physical facts and phenomenal facts is familiar. Even if we knew all the relevant physical facts about a subject (such as facts about behavior and function), we would not thereby be in a position to know the phenomenal facts about that subject's experience.²¹ However, illustrations of the explanatory gap nearly always focus on the qualitative character of experience. For example, philosophers often appeal to facts about seeing red, feeling pain, and so forth to explain why phenomenal facts are conceptually isolated from physical facts. Since arguments for the explanatory gap nearly always focus on subjective facts, and since structural facts are objective, it may be tempting to think that structural facts are immune to the explanatory gap. But I will argue otherwise: just as there is an explanatory gap between physical facts and qualitative facts about experiences, so too there is an explanatory gap between physical facts and structural facts about experiences.

The simplest way to see this is with the following argument. Structural facts about experiences ascribe the property of being an experience. But there is an explanatory gap between physical facts and facts about which creatures are conscious at all. By consequence, it trivially follows that there is an explanatory gap between physical facts and structural facts. Otherwise, we would have to give up the supposition that there is an explanatory gap between physical facts and facts

²¹ I will take the existence of the explanatory gap for granted, though I will remain neutral on whether it has any metaphysical significance. See Levine [1983] for a classic discussion of the explanatory gap. Though I frame my discussion in terms of knowledge, it could also be framed in terms of other notions (such as a priori entailment or scrutability).

about which creatures are conscious at all.

What if we knew which creatures are conscious? It may be tempting to think that the explanatory gap between physical facts and structural facts is simply due to the fact that structural facts predicate the property of being an experience. If that were the source of the gap, then the explanatory gap between physical facts and structural facts would be relatively uninteresting. But the structural explanatory gap runs deeper. Even if we were to know all the physical facts and facts about which creatures are conscious, the structural explanatory gap would remain.

To see this, consider the following scenario. Suppose there is a robot such that (1) we know all of the physical facts about the robot, (2) we know that the robot is conscious, and (3) we know nothing else about the phenomenal character of the robot's experiences. Consider two competing hypotheses about the robot's experiences. According to the first hypothesis, the robot's experiences have one dimension of variation and no mereological structure. According to a second hypothesis, the robot's experiences have ten dimensions of variation and a rich mereological structure. Neither hypothesis says anything about the specific qualitative character of the robot's experience; the hypotheses differ only with respect to which structural properties they ascribe. But the two hypotheses, though mutually exclusive, are both compatible with our prior knowledge. This indicates that even the physical facts augmented with facts about which creatures are conscious do not entail structural facts about experience.

The upshot is that there is a *structural explanatory gap* between physical facts and structural facts. The physical facts alone are insufficient for acquiring knowledge of any aspect of phenomenal character, whether that is consciousness itself, qualitative character, or structure.

What does this mean for the prospects for developing an objective phenomenology? We began with the question of whether there is a way of understanding the phenomenal character of experiences that does not require one to have had the kinds of experiences under consideration. I have argued the answer is 'yes': there is indeed a class of objective phenomenal facts. That answer does not change when we recognize the existence of the structural explanatory gap. And that answer is significant: there are phenomenal facts about even the most exotic experiences of bats and octopuses and aliens that we are in a position to understand, despite the fact that we occupy radically different points of view.

At the same time, the existence of the structural explanatory gap means that there are methodological challenges for actually acquiring knowledge of those objective phenomenal facts. In fact, the structural explanatory gap indicates that the methods for investigating the structure of experience may not be significantly from the methods for investigating the qualitative character of experience. In both cases, discovering the relevant facts will likely require a combination of drawing abductive inferences from observations about behavior and function, constructing bridging principles that connect physical facts to phenomenal facts, and deploying first-person (in addition to third-person) methods.

In light of this, I think a balanced perspective on objective phenomenology requires recognizing both its prospects and its limits. There are indeed objective phenomenal facts, and seeing why that is the case advances our understanding of consciousness. But the fact that an objective phenomenology is possible does not automatically solve the challenges facing the investigation of consciousness.

conclusion

I began with a speculative remark from Nagel. From there, I developed a framework for examining the question of objective phenomenology with greater precision. With the framework, I argued that a phenomenal fact is subjective whenever the phenomenal concepts required to understand that fact are subjective, and that the subjectivity of phenomenal concepts is itself explained by the limits of introspection, abstraction, extrapolation, and recombination.

By contrast, structural facts are objective. To understand a structural fact, one need deploy only the phenomenal concept EXPERIENCE and structural concepts. The concept EXPERIENCE is objective because it is maximally general and hence acquirable from every point of view. Structural concepts are objective because they are required for understanding the canonical examples of objective facts (such as mathematical and physical facts), because the same structural properties can be instantiated by both experiences and other kinds of things, and because they are free from the experiential constraints that limit the acquisition of phenomenal concepts.

A core aim of this paper has been to explain why structural facts about experience are interesting and important. Even though degree of generality correlates with degree of objectivity for facts purely about the qualitative character of experiences, structural facts can be highly specific yet perfectly objective. Even

though structural facts are objective, there nevertheless remains an explanatory gap between physical facts and structural facts about experience. Even though the properties ascribed by structural facts characterize the phenomenal character of experiences, they are not themselves phenomenal properties since the same structural properties can be instantiated by other kinds of things. And, of course, even though many phenomenal facts are subjective, structural facts are objective.

To actually undertake the task of developing an objective phenomenology, we need to develop better models of the structure of experience and better principles connecting phenomenal structure to physical structure. As we make progress on those questions, we will better appreciate the prospects—and limits—of what we can understand about the experiences of other creatures.

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