Objective Phenomenology

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ABSTRACT:

This paper argues for the possibility of an objective phenomenology—a way of understanding the phenomenal character of experiences that does not require one to have had the kinds of experiences under consideration. My central thesis is that facts that are purely about how experiences are structured are objective. I begin by developing a framework that enables us to assess the idea of objective phenomenology with greater precision. Then I diagnose what makes any given phenomenal fact subjective, argue that there is a class of objective phenomenal facts, and argue that there is a structural explanatory gap between physical facts and structural facts about experience.

INTRODUCTION

This paper argues for the possibility of an objective phenomenology, or a way of understanding the phenomenal character of 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 purely about how the phenomenal characters of experiences are structured—are objective.

The idea of an objective phenomenology comes from a cryptic remark at the end of "What is it like to be a bat?" by Thomas Nagel. Here is the main passage:

> 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.
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> —Thomas Nagel, "What is it like to be a bat?" [1974]

Though Nagel's the passage above is well-known, there has been little work directly addressing the possibility of an objective phenomenology.[1] 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 develop Nagel's core ideas into a framework that enables us to assess the idea of objective phenomenology with greater precision. In **§2**, I explain why certain phenomenal facts are subjective. In **§3**, I argue that there is a class of

[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.

objective phenomenal facts: namely, facts purely about how experiences are structured. In §4, I argue for a new kind of explanatory gap, between physical facts and structural facts about experience.

§ 1 | OBJECTIVITY

The basic notion of objective phenomenology is somewhat obscure. To examine the idea rigorously, we need to take Nagel's core ideas and develop them into a more precise framework. Doing so will enable us to both better understand what an objective phenomenology would be and to better assess its prospects.[2]

OBJECTIVITY

There are some facts about other creatures that we are in a position to understand, such as facts about behavior, function, and physiology. For example, 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. Perhaps more empirical or theoretical investigation is needed to actually acquire knowledge of these facts. But if such facts were presented to us, we would be able to understand them. These are the kinds of facts that Nagel calls *objective*.[3]

There are also facts about other creatures that it seems we could never be in a position to understand—specifically, certain facts about what it is like to be those creatures. For example, in the case of bats, these might include facts about what it is like to echolocate.[4] Our inability to understand such facts is not due to limits in

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[2] The primary texts from Nagel relevant to these issues are "What is it like to be a bat?" [1974] and *The View From Nowhere* [1986] (especially Chapters 1 and 2).

[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] Actually, we can probably attain a partial grasp of the phenomenal character of echolocation experience, since humans can have basic echolocation capacities (even without training). For

empirical or theoretical investigation, but instead due to our inability to occupy the point of view of those creatures. These are the kinds of facts that Nagel calls *subjective*.[5]

As Nagel famously pointed out, phenomenal facts seem to necessarily lie on the subjective side. 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 creature that could have sufficiently similar experiences. More empirical investigation or theoretical analysis seems of little help; it seems we are prevented from understanding such facts by the very way that we are built. The challenge of objective phenomenology is to develop a way of understanding the phenomenal character of experiences that does not require occupying a particular point of view.[6]

To address this challenge, we first need a more precise characterization of objectivity. Here is an initial analysis: a fact is *objective* just in case it is understandable from every point of view. Some paradigm examples of objective facts include mathematical facts, such as $e^{i\pi} + 1 = 0$, and physical facts, such as water is H2O. Conversely, a fact is *subjective* just in case it is understandable only from particular points of view. Some paradigm examples of subjective facts include facts about what it is like to have certain kinds of experiences, such as phenomenal redness feels like *this* or pain feels like *that*.

Some physicalists might object that phenomenal facts just are physical facts. But for our purposes, 'fact' should be understood to mean true proposition (rather

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an overview of the relevant research, see Kolarik [2014]. Despite this, I will continue using the example of echolocation experience to preserve continuity with Nagel's paper.

[5] Nagel [1974] says that while "there are facts which humans never will possess the requisite concepts to represent or comprehend ... 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."

[6] Not all facts about experiences are phenomenal facts. For example, the fact that an experience is made of atoms (assuming physicalism is true) is a fact about an experience (but not a phenomenal fact). 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.

than state of affairs).[7] For physicalists who prefer not to frame the discussion in terms of facts, we could instead frame the discussion in terms of truths, concepts, or modes of presentation. So long as one accepts that there are the aforementioned asymmetries between what we could understand about the experiences of other creatures and what we could otherwise understand about domains such as the external world, we can examine the question of objective phenomenology.[8]

POINTS OF VIEW

Our initial analysis characterizes a fact as objective just in case it is understandable from every point of view. But what does that mean?

On an intuitive level, points of view are meant to capture the different epistemic perspectives associated with different kinds of experiencers. For example, my point of view enables me to understand many phenomenal facts about human experiences but not certain phenomenal facts about bat experiences. More precisely, *points of view* correspond to sets of experiential capacities. Every creature has a set of experiential capacities, which determines which experiences that creature could have. For example, my experiential capacities enable me to have a wide range of human experiences, but they do not enable me to have bat experiences. Since the experiences that I could have are different from the experiences that a bat could have, we have different points of view.[9]

When we apply this to our characterization of objectivity, we get the result that a fact is objective just in case it is understandable given every set of experiential capacities. More precisely, this concerns every possible point of view, rather than

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[7] Using the term 'fact' follows the terminology in Nagel [1974, 1986].

[8] Most physicalists accept that there are such asymmetries. For others, the debate depends on deeper theoretical issues that cannot be addressed here. The issue of objective phenomenology is interesting only if we grant the basic observations expressed by Nagel—I am interested in starting from there in order to progress further.

[9] I take this characterization of points of view to align with 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].

every actual point of view. If we were concerned only with actual points of view, then which creatures actually exist would make a difference to the objectivity of a fact. But intuitively, whether or not a fact is objective should be independent of which creatures actually exist.

For the purposes of this paper, I will assume that zombies, or creatures with no experiential capacities, lack a point of view. This is a somewhat stipulative matter about how to draw the boundaries for which facts count as objective, but it is important for the core thesis of this paper. In particular, I do not aim to argue that it is possible to develop an objective phenomenology if objective facts must be understandable even by zombies. The reason for this will be clearer once we get to the discussion of structural facts, but the basic idea is that understanding any phenomenal fact requires at least the concept of experience itself and zombies cannot acquire that concept. Nevertheless, I will argue that there are phenomenal facts about even the most exotic experiences of bats and aliens and octopuses that we could understand, despite the fact that we have radically different experiential capacities than those creatures. That is the principal challenge set forth by Nagel, as well as the main ambition of this paper.

Some might argue that points of view should also be individuated by cognitive capacities (in addition to experiential capacities). However, this way of thinking about points of view would fail to capture the concept of objectivity that we started with. For example, a shrimp lacks the cognitive capacities required to understand mathematical facts such as $e^{i\pi} + 1 = 0$ and physical facts such as water is H2O, but that does not make mathematical and physical facts subjective. If points of view were individuated by cognitive capacities, then no domain of facts whatsoever would count as objective, since for any fact there would be some points of view that lack the cognitive capacities required to understand that fact. To develop an interesting notion of objectivity in the first place, we must abstract away from cognitive capacities when individuating points of view.[10]

[10] Analogous considerations apply to other kinds of factors that might be used to individuate points of view, such as environmental factors or indexical factors.

The last core concept is understanding. To *understand* a fact is to grasp its content. A fact is understandable from a creature's point of view just in case that creature possesses the experiential capacities necessary for understanding that fact. If no experiential capacities at all required for understanding a fact, then that fact is understandable from every point of view. Likewise, a fact might be understandable from a creature's point of view even if that creature lacks the cognitive capacities needed to grasp that fact. For example, suppose my cat lacks the metacognitive capacities needed to think about her own experiences. Nevertheless, facts about her experiences are still understandable from her point of view since she has the experiential capacities needed to understand those facts. This also means that a fact might be understandable even if it is unknowable. For example, suppose it is physically impossible to discover that there is an odd number of electrons in the universe. Even so, we still can understand what it is for the universe to contain an odd number of electrons.

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.[11] This provides a more precise analysis of 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 diagnose what makes any given phenomenal fact subjective. Identifying the source of subjectivity will set the stage for understanding why some phenomenal facts are objective.

PHENOMENAL CONCEPTS

To understand any phenomenal fact, one must possess *phenomenal concepts*,

[11] This aligns with the characterization of objectivity in Howell [2007], 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."

or concepts of experiences that enable one to think about what it is like to have those experiences.[12] For example, when I deploy the concept PHENOMENAL REDNESS to think about my color experience of a red object, I deploy a phenomenal concept. We can contrast phenomenal concepts with mere concepts of experiences, which refer to experiences without enabling one to think about what it is like to have those experiences. For example, the concept THE EXPERIENCES BATS USE TO NAVIGATE THEIR ENVIRONMENT refers to an experience, but it is not a phenomenal concept since it does not enable one to think about what it is like to echolocate.

In the previous section, I characterized objectivity as a property of facts, but objectivity can also be naturally extended to concepts. 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. The observations above indicate that phenomenal concepts are subjective. And this establishes the first step in an explanation of why some phenomenal facts are subjective: in particular, because some phenomenal concepts are subjective. But this leads to the next question: what determines which phenomenal concepts are acquirable by a given point of view?

To answer that question, we must identify the methods that can be used to acquire phenomenal concepts. The most obvious method is introspection. For any point of view, there is a core set of phenomenal concepts acquirable through introspection: for example, I might form a phenomenal concept of pain by introspecting the pain experiences I have actually had. 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

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[12] For the purposes of this paper, I take for granted that there are phenomenal concepts. For an overview and defense of phenomenal concepts, see Chalmers [2003 b]. Most philosophers of mind accept that there are such concepts, as evinced by Papineau [2006] when he says that they are "common coin among nearly all contemporary philosophers working on consciousness." An exception is Ball [2009], who argues that social externalist considerations demonstrate that there are no phenomenal concepts whose acquisition requires one to have had certain experiences, though see Rabin [2011] and Alter [2013] for counterarguments.

uncontroversial that one can form phenomenal concepts for many of the experiences associated with one's own point of view.

On some views, introspection puts us in contact only with particular experiences, rather than with phenomenal properties. Nevertheless, we can *abstract* from those particular experiences to acquire concepts for the phenomenal properties that characterize those experiences. For example, suppose I introspect a phenomenal red experience. By doing so, I can not only form a particular phenomenal concept of that particular phenomenal red experience, but also a universal phenomenal concept of phenomenal redness. 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? In my view, there are two such methods. The first is *extrapolation*, whereby we form novel concepts characterized by the same dimensions as our prior concepts. For example, even if I have never visually experienced the missing shade of blue, I may be able to extrapolate from my 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 I have never had the experience of eating watermelon while smelling cinnamon, I might be able to recombine my prior phenomenal concepts for each individual experience to acquire a novel phenomenal concept for the complex experience.

It is plausible there are hard limits in how far introspection, abstraction, extrapolation, and recombination could take us. Even if a creature 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 the four methods: introspection and abstraction are limited to experiences one has had, extrapolation is limited to dimensions of experience whose values 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. Supposing that is the case, there will generally be restrictions on which phenomenal concepts are acquirable by any given point of view.[13]

This gives us a deeper explanation for why any given phenomenal fact is subjective. Understanding phenomenal facts requires deploying phenomenal concepts. But for any point of view, only a limited range of phenomenal concepts are acquirable, given the limits to introspection, abstraction, extrapolation, and recombination. So, any phenomenal fact whose understanding requires phenomenal concepts acquirable by only certain points of view must be subjective. 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 claim 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

[13] 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 incompletable."

it is understandable from a greater range of points of view.[14] For example, phenomenal facts about experience itself are intuitively more objective than phenomenal facts about red_{34} experience. This raises a new question: what makes a phenomenal fact more or less objective?

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.[15] 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 natural 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

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[14] 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.

[15] Note that a fact could be general even if it is about specific individuals. For example, the fact that subject s is in pain is highly general because the phenomenal property picked out (namely, painfulness) is instantiated by a wide range of possible experiences.

phenomenal facts in general, it is true when our concern is restricted to phenomenal facts that concern only the qualities (as opposed to the structures) of experiences. In other words, there is in fact a systematic link between specificity and objectivity, but only when we set aside matters concerning how experiences are structured.

§ 3 | STRUCTURAL FACTS

We are now in position to move to the objective phenomenal facts—namely, structural facts.[16] Though structural facts are not often discussed in contemporary analytic philosophy of mind, they are interesting and important in their own right—not least because they are objective.[17]

STRUCTURE

A *structural fact* is a fact that characterizes how an experience is 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 provide 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 qualitative properties.

It is hard to express structural facts in natural language, in part because

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[16] Nagel [1974] 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." Nevertheless, at other times Nagel expresses doubt about the prospects for objective phenomenology, such as when he says that it "is difficult to understand what could be meant by the objective character of an experience, apart from the particular point of view from which its subject apprehends it."

[17] Beyond analytic philosophy, certain historical traditions have addressed related philosophical issues concerning the structure of experience. These traditions include early psychophysics (e.g., Fechner [1860]), phenomenology (e.g., Husserl [1913]), and logical positivism (e.g., Carnap [1928]). For purposes of space, I will set aside discussing particular ways in which the ideas discussed here relate to those of authors across these traditions.

there is little consensus on which kinds of structural properties experiences actually have and in part because of limitations of space. 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 collection of experiences $x_1 \ldots x_n$ can be modeled by a quality-space model M 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, STRUCTURE is a primitive concept—it is hard to think of any concept more general or fundamental. Nevertheless, we can still get a grip on 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, MAGNITUDE, PART, DIMENSION, and SIMILARITY. Other candidates that are somewhat more contestable include nomic, modal, and informational concepts, such as CAUSE, SPACE, NECESSITY, and ENTROPY.[18] 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 need not itself be an experience). Though these facts deploy only structural concepts and the concept EXPERIENCE, they arguably do not provide any information about what

[18] There are also concepts for higher-order phenomenal properties, such as INTENSITY, CENTRALITY, SALIENCE, and PRECISION. I am inclined to think that 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].

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.[19] The most well-known quality-space model is the three-dimensional color solid (with hue, saturation, and brightness as dimensions), which specifies the dimensions of similarity and relations of magnitude between different color qualities. Suppose 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, a set of dimensions, and a metric function that outputs 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 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 some substantial facts 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 consistent with my claims, since I am arguing only that a special class of

[19] See Clark [2000] and Rosenthal [2010] for more comprehensive discussions of quality-space models. Notably, both authors claim that mental quality-spaces are isomorphic to physical quality-spaces, meaning that the same formal structure is applicable to both domains. In [BLINDED FOR REVIEW], I argue that models for mental qualities must have richer structures than those for physical qualities, and I develop a formal framework that provides a more substantive example of what developing an objective phenomenology might look like.

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 consequence will be that structural properties are not phenomenal properties, despite the fact that structural properties can characterize what it is like to have an experience.

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, and SIMILARITY. 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 if we are interested in genuine structural facts, then we should be concerned with *purely structural facts*, or facts that predicate only structural properties (and not the property of experience itself). But arguing that purely structural facts are objective would establish nothing about objective

phenomenology, since purely structural facts are not phenomenal facts.[20] 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 the objectivity of EXPERIENCE. But the previous section provided a diagnosis of why any given phenomenal concept is subjective, rather than an argument that all phenomenal concepts must be subjective. The diagnosis was that acquiring phenomenal concepts requires introspection, abstraction, extrapolation, or recombination, and the argument was that one's experiential capacities constrain which phenomenal concepts one could acquire. This is consistent 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 creature actually has the concept or even that every creature could acquire the concept, but it does mean that every creature 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. 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

[20] 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).

objectivity in the first place.[21] Of course, for any structural concept, there will be many creatures that will be unable to acquire that concept. But this is plausibly due to the kinds of cognitive limits that prevent creatures from understanding mathematical and physical facts, rather than the experiential limits that prevent creatures 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 acquirable through abstraction, extrapolation, and recombination). By contrast, there do not seem to 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-DIMENSION SPACE, even though it is implausible that human experiences instantiate the structural properties denoted by those concepts.

Might one argue that the structural concepts that I am talking about are really phenomenal concepts in disguise? Suppose that the phenomenal spatial properties characterizing spatial experience are fundamentally different from the physical spatial properties characterizing physical space. Would this mean that the structural concepts for experiences are fundamentally different from the structural concepts for physical phenomena? To see why that does not follow, consider how we

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[21] 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 the reference of what property the notion of objectivity picks out.

could still ask whether spatial experience and physical space have the same structures. For example, we might wonder whether both spatial experience and physical space can be modeled using affine (as opposed to, say, Euclidean) 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 properties that we ascribe to experiences can also be ascribed to physical phenomena. And even if experiences turn out to instantiate different structural properties from any physical phenomena, the mere fact that we can entertain these kinds of hypotheses shows that the kinds of structural concepts we apply to experience are the same as the kinds of structural concepts we apply to physical phenomena. Putting it another way, structural properties are neutral properties that can characterize all sorts of phenomena: phenomenal, physical, abstract, and so forth.

In fact, we need not rely on hypothetical scenarios 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 model either the structures of experiences (e.g., color experiences) or the structures of external objects (e.g., colors). Consequently, there must be some structural properties that are shared between color experiences and colors themselves. This means that the kinds of structural properties captured by quality-space models are not specific to experiences. More generally, the structural concepts that denote structural properties of experiences are the same as the structural concepts that denote structural properties of physical phenomena. We have already discussed reasons to think that the structural concepts required to understand physical facts are objective. Consequently, the structural concepts required to understand structural facts about experience are also objective.

Setting aside abstract arguments, the claim that structural facts are objective is also supported by intuitions about cases. While we cannot understand most phenomenal facts about bat, octopus, or alien experiences, it is 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.[22]

From this point onwards, I will take for granted that structural facts are objective. Over the rest of the section, I will address two worries about the significance of this conclusion: the first worry is that structural facts are not substantive, and the second worry is that structural facts are not phenomenal facts.

SUBSTANTIVITY

Some might agree that structural facts are objective but question the substantivity of this conclusion. Perhaps after we extricate all qualitative content from the facts under consideration, what we are left with is too impoverished to be worth caring about.[23] 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 substantive, 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 an 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, then we

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[22] 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."

[23] This is related to 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 all we can glean from structural facts are facts about the cardinality of the objects of a domain. However, the notion of structure discussed here is arguably richer than the notion that leads to Newman's problem. For an overview of Newman's problem, see Ainsworth [2009].

would enrich our knowledge of the experiences of those creatures, even if we lacked knowledge 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 in general 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. This observation also 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. 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 creatures that are inconceivably exotic (relative to our own point of view) would have experiences for which we would be limited to understanding only structural facts.

PHENOMENALITY

Are structural facts about experience genuinely phenomenal facts? Even if structural facts are objective and substantive, I have not made a case for objective phenomenology unless we also have good reason to categorize them as phenomenal facts. 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 as a species of phenomenal facts.

To begin, recall that when I talk about structural facts, I mean facts that characterize the phenomenal characters of experiences. There are purely structural facts that predicate only structural properties (such as the fact that at least one thing exists), but those are not phenomenal facts (since they are not about experiences). And there are facts that ascribe structural properties to experiences without characterizing what it is like to have the experiences (such as the fact that experience x is self-identical), but these are not the kind of structural facts relevant here. To be a structural fact about experience, the structural properties ascribed must characterize what it is like to have that experience. On any standard definition of 'phenomenal fact', this suffices for structural facts to count as phenomenal facts.[24]

It may be tempting to think that structural facts are not phenomenal facts because they do not ascribe phenomenal properties. After all, I argued that structural properties need not be instantiated only by experiences, and it seems analytic that phenomenal properties are the properties that characterize what it is like to have an experience. Now, this objection has a false premise, since structural facts ascribe the phenomenal property of being an experience. But even if we set aside the false premise, this objection 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

[24] Analogously, structural concepts are not phenomenal concepts (since they do not attribute any qualitative property) and structural properties are not phenomenal properties (since they do not have any qualitative aspect).

(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, then there is no good reason to think that phenomenal facts must ascribe specific phenomenal properties (at least once we recognize that structural properties can also characterize what it is like to have an experience).

A way to get an intuitive grip on why structural facts about experience are phenomenal facts is to return to our analogy with 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.

In addition, structural facts simply exhibit many canonical properties of phenomenal facts. First, phenomenal facts are the kinds of facts we learn through introspection—and we learn structural facts through introspection. Second, phenomenal facts are the kind of facts that characterize what it is like to have an experience—and structural facts characterize what it is like to have an experience. Of course, structural facts alone cannot completely characterize what it is like to have an experience, but neither can facts purely about which phenomenal qualities an experience instantiates. And third, I will argue in the next section that there is an explanatory gap between physical facts and structural facts. A diagnosis is that there is an explanatory gap between physical facts and all phenomenal facts, and that structural facts are a species of phenomenal fact.

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

§ 4 | THE STRUCTURAL EXPLANATORY GAP

In this final section, I will argue for a new kind of explanatory gap between physical facts and structural facts about experience. Then I examine, in light of this gap, the implications of objective phenomenology for the investigation of experience.

THE STRUCTURAL GAP

Any philosopher of consciousness is familiar with the idea that there is an explanatory gap between physical facts and phenomenal facts. Even if we knew all the relevant physical facts about a creature, such as facts about brains and behavior, we would not thereby be in a position to know the phenomenal facts about that creature's experience. For the purposes of this paper, I will simply take the existence of the explanatory gap for granted (though I will remain neutral on whether the explanatory gap has any metaphysical significance).[25]

Illustrations of the explanatory gap tend to focus on qualitative facts: for example, philosophers often appeal to facts about seeing red, feeling pain, echolocating, and so forth. But what about structural facts? Since structural facts are more epistemically tractable than qualitative facts, it is less obvious that the explanatory gap applies to structural facts. In fact, the objectivity of structural facts may tempt some to think that structural facts about experience are immune to the explanatory gap. However, I will argue that structural facts about experience—though objective—nevertheless give rise to an explanatory gap as well.

The clearest way to see this is with the following argument. Structural facts about experience 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 a contradiction with the supposition that there is an explanatory gap between physical facts and facts about which creatures are conscious at all.

What if we knew which creatures are conscious? It is tempting to think that the explanatory gap between physical facts and structural facts is simply due to the

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[25] Most contemporary philosophers of mind accept that there is an explanatory gap (see Levine [1983] and Chalmers [2003 a] for discussion). Though I frame the gap in terms of knowledge, my arguments would also work if they were framed in terms of other notions (such as in terms of a priori entailment, inference, scrutability, or deducibility).

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. Suppose that there are two competing hypotheses about the robot's experiences. According to HYPOTHESIS 1, the robot's experiences have one dimension of variation and no mereological structure. According to HYPOTHESIS 2, the robot's experiences have ten dimensions of variation and multiple parts. 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 consistent with our prior knowledge. So 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 mere consciousness, qualitative character, or structure.

STRUCTURAL BRIDGING PRINCIPLES

What does the structural explanatory gap mean for the investigation of experience? A natural thought is that investigating even structural facts about experience requires first-person methods (i.e., introspective methods that enable knowledge of phenomenal facts about our own experiences), as opposed to merely third-person methods (i.e., perceptual methods that enable knowledge of physical facts about the external world).

However, even though third-person methods alone are inadequate for discovering structural facts about experiences, first-person methods are limited as

well. This is easy to see when we observe that each subject has first-person access only to their own experiences. Now at first, this might seem to merely be the familiar problem of other minds. But remember that our present concern is with the prospects and limits of what we can discover about the experiences of other creatures. Even if we set aside the problem of other minds and take first-person methods to be adequate for investigating the structures of our own experiences, they remain limited if we are concerned with structural facts about the experiences of other creatures.

In my view, the best approach to overcome these limitations is to develop *structural bridging principles*, or principles by which we make inferences about structural facts from physical facts. We might think of such principles as modeled by functions where the input is a set of physical facts (such as facts about a creature's neural state) and the output is a set of structural facts about experience (such as facts about mereological and quantitative structure).

To develop such principles, we need to combine first-person and third-person methods. Here is the general methodology: By comparing first-person data with third-person data, we establish correlations between physical facts and phenomenal facts. By systematizing and generalizing those correlations, we develop principles about how phenomenal structure maps to physical structure. And by applying those principles to third-person data, we discover structural facts about the experiences of other creatures. More specifically, we can use third-person methods to discover physical facts about a creature, and then apply structural bridging principles to infer phenomenal facts about their experiences.[26] This methodology enables us to discover structural facts about the experiences of other creatures, as well as our own.

When we think about the experiences of other creatures, we often tacitly deploy structural bridging principles. For example, we might make inferences about the structure of bat experiences from knowledge of bat behavior, function, and physiology. But it is important to recognize the implicit principles that are the basis

[26] See Chalmers [2004] for a more comprehensive discussion of bridging principles and their role in the science of consciousness. See Teller [1984] for more concrete discussion of how to develop such bridging principles.

for these inferences. Even the assumption that the structure of an experience is homomorphic to the structure of its physical correlates is a substantive structural bridging principle. Furthermore, even though we implicitly invoke such principles, it is not obvious which particular principles are justified. If we could explicitly characterize the structural bridging principles that we tacitly deploy and evaluate their plausibility, then that would be progress.

What about *qualitative bridging principles*, or principles by which we make inferences from physical facts to qualitative facts? It is obvious that qualitative bridging principles are also important for the investigation of experience. But they have limitations that do not apply to structural bridging principles. Since qualitative facts are typically subjective, there are limited applications for qualitative bridging principles when investigating experiences beyond our own point of view. After all, a qualitative bridging principle is useless if we are unable to acquire the phenomenal concepts needed to understand its outputs. In contrast, no analogous problem arises for structural bridging principles since structural facts are objective. No matter how exotic an experience might be, we will always be in a position to understand facts about how it is structured.

Nevertheless, developing structural bridging principles will require us to overcome some big challenges. On the face of it, the structure of experience is radically different from the structure of the physical correlates of experience. It is plausible that there are systematic principles that connect physical structure to phenomenal structure, but it is unclear exactly what these principles might look like. Developing such principles requires the empirical work of investigating the physical correlates of consciousness and evaluating different hypotheses, and the theoretical work of interpreting the data and developing generalized theories. And even when we do acquire a plausible set of structural bridging principles for our own experiences, there is a question of whether we would be justified in extending those principles to the experiences of other creatures. As we venture away from the familiar cases, our evidential support weakens.

The most important challenge lies in attaining a better understanding of the structure of experience itself. Unless we have a clear grip on which structural

properties experiences actually instantiate, we cannot develop structural bridging principles that link those structural properties to physical properties, or even appreciate which forms the objective phenomenal facts might take. To make progress, we need systematic tools for analyzing and modeling the structure of experience. In my view, this is one of the most important tasks facing the investigation of experience, and one of the most promising paths towards progress.

CONCLUSION

I began with a speculative remark from Nagel. From there, I developed a framework that enables us to examine 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 major aim of this paper has been to show how structural facts about experience are epistemically interesting. 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 objective facts about the physical world are discoverable using solely third-person methods, discovering structural facts about experience requires first-person methods because of the structural explanatory gap. Even though structural properties can 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 the limits—of what we can understand and discover about the experiences of other creatures.

REFERENCES

Ainsworth, Peter M. (2009). Newman's objection. *British Journal for the Philosophy of Science* 60 (1):135-171.

Alter, Torin (2013). Social Externalism and the Knowledge Argument. *Mind* 122 (486):fzt072.

Atkins, Richard Kenneth (2013). Toward an objective phenomenological vocabulary: how seeing a scarlet red is like hearing a trumpet's blare. Phenomenology and the Cognitive Sciences 12 (4):837-858.

Ball, Derek (2009). There are no phenomenal concepts. *Mind* 118 (472):935-962.

Biro, John (2006). A point of view on points of view. *Philosophical Psychology* 19 (1):3-12.

Block, Ned (2015). The Puzzle of Perceptual Precision. *Open Mind*.

Carnap, Rudolf (1928). *The Logical Structure of the World*. Berkeley: University of California Press.

Chalmers, David J. (2003 a). Consciousness and its place in nature. In Stephen P. Stich & Ted A. Warfield (eds.), *Blackwell Guide to the Philosophy of Mind*. Blackwell. pp. 102--142.

Chalmers, David J. (2003 b). The content and epistemology of phenomenal belief. In Quentin Smith & Aleksandar Jokic (eds.), *Consciousness: New Philosophical Perspectives*. Oxford University Press. pp. 220--72.

Chalmers, David J. (2004). How can we construct a science of consciousness? In Michael S. Gazzaniga (ed.), The Cognitive Neurosciences Iii. MIT Press 1111--1119.

Clark, Austen (2000). Quality space. In Austen Clark (ed.), *A Theory of Sentience*. Oxford University Press.

Corwin, Thomas (2001). "Sensory adaptation: Tunable colour vision in a mantis shrimp". *Nature*. 411 (6837): 547–8.

Cronin TW, Marshall NJ (1989). "A retina with at least ten spectral types of photoreceptors in a mantis shrimp". *Nature*. 339 (6220): 137–40.

Farkas, Katalin (2008). *The Subject's Point of View*. Oxford University Press.

Fechner, G., 1860, *Elements of Psychophysics*, H.E. Adler (trans.), New York: Holt, Reinhart & Winston, 1966.

Frigg, Roman & Votsis, Ioannis (2011). Everything you always wanted to know about structural realism but were afraid to ask. European Journal for Philosophy of Science 1 (2):227-276.

Howell, Robert J. (2007). The knowledge argument and objectivity. *Philosophical Studies* 135 (2):145-177.

Husserl, Edmund. 1913. *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*. Trans. F. Kersten. The Hague: Nijhoff.

Johnston, Mark (2007). Objective mind and the objectivity of our minds. *Philosophy and Phenomenological Research* 75 (2):233–268.

Kolarik, Andrew J., Cirstea, Silvia, Pardhan, Shahina, & Moore, Brian C. J. (2014). A summary of research investigating echolocation abilities of blind and sighted humans.

Levine, Joseph (1983). Materialism and qualia: The explanatory gap. Pacific Philosophical Quarterly 64 (October):354-61.

McGinn, C. 1983. *The subjective view*, Oxford, , England: Oxford University Press

Mensch, James R. (2000). An objective phenomenology: Husserl sees colors. Journal of Philosophical Research 25 (January):231-260.

Moore, A. W. (1987). Points of view. *Philosophical Quarterly* 37 (146):1-20.

Nagel, Thomas (1974). What is it like to be a bat? Philosophical Review 83 (October):435-50.

Nagel, Thomas (1986). The View From Nowhere. Oxford University Press.

Papineau, David (2006). Phenomenal and perceptual concepts. In Torin Alter & Sven Walter (eds.), *Phenomenal Concepts and Phenomenal Knowledge: New Essays on Consciousness and Physicalism*. Oxford University Press. pp. 111--144.

Rabin, Gabriel (2011). Conceptual mastery and the knowledge argument. *Philosophical Studies* 154 (1):125-147.

Rosenthal, David (2010), "How to Think about Mental Qualities," Philosophical Issues: Philosophy of Mind, 20 (October): 368-393.

Teller, D. Y. (1984). "Linking propositions". *Vision Research*. 24 (10): 1233–1246.

Watzl, Sebastian (2017). *Structuring Mind. The Nature of Attention and How it Shapes Consciousness*. Oxford, UK: Oxford University Press.