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Claremont McKenna College

Structuralist Qualia

SUBMITTED TO

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BY

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FOR

SENIOR THESIS

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Abstract

Structuralist theories of properties state that properties are individuated by their nomological or causal roles. It has previously been suggested that structuralism is incompatible with robust conceptions of qualia. In this paper, I argue that structuralism should be taken as a theory of *de re* representation, and under this formulation it is able to accommodate qualia as intrinsic, introspectable properties of experiences. I then turn to various thought experiments used by qualia theorists to expand the notion of qualia, and find the majority of these compatible with structuralism as well. I conclude that the structuralists and qualia theorists need not be at odds with each other.

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Introduction: Structuralism and Qualia

What separates one property from another? Intuitively, we differentiate properties within our world by the effects objects possessing the properties have on the world. If an object possesses the property we call mass, it will resist acceleration under force and bend spacetime in a particular way proportional to the amount of mass possessed by the object. If an object does not possess mass, it will not resist acceleration under force or bend spacetime in a particular way. Such nomological distinctions are essentially what science tells us—there are certain relations between things in our world, and it is possessing certain properties that leads to these relations.

On one view, the nomological role of a property *is* its essence. What it is to have mass is to play the mass role. That is to say that the nomological profile of a property is necessary—it could not have been any other way. There is some nomological role that is necessary and sufficient for being that property. This view is frequently referred to as structuralism.

On a competing view, the nomological profile of a property is contingent. It could have been that mass played a slightly different role—perhaps objects possessing mass would have resisted acceleration under force in a slightly different way. Or, it could have been that objects possessing mass would not resist acceleration under force at all. Or, even more extreme, the nomological role of mass could have been the same as the nomological role actually played by negative charge. There are two conceptions of this view: under robust quidditism, there is some underlying nature or essence (often called a *quiddity*) to a property that separates it from other properties. Under austere quidditism,

properties are individuated by numerical identity. Depending on which view a particular quidditist subscribes to, all that is essential to a property is its quiddity or its numerical identity—the role the property plays is entirely non-essential. This view is frequently referred to as quidditism, and is most notably advanced by David Lewis.¹

In this paper, I will be focusing on the relationship between the structuralist view of properties and a particularly peculiar class of property—phenomenal properties. Phenomenal properties are often referred to as the “felt qualities,” “raw feels,” or “phenomenal character” of experiences. Presumably there is *something that it’s like* to have an itch, or to feel pain, or to taste an apple—and this “what it’s like-ness” forms the basis of the debate surrounding phenomenal properties. There is much disagreement over whether such properties can be reduced to physical states, functional states, or their representational contents. I am interested in examining the claims of those who advance the most robust views of phenomenal properties—whom I will refer to as qualia theorists. These proponents of “qualia” argue primarily that the phenomenal properties of experiences are intrinsic, introspectable properties. They also advance arguments about the indescribability, privacy, and irreducibility of phenomenal properties.

What is the relationship between these two debates? It is unclear if structuralism is able to accommodate qualia as a class of properties. Qualia theorists often suggest that there is some intrinsic nature to qualia that cannot be captured in functional or physical profiles—and on first pass this suggests conflict with the structuralist thesis that the nomological role of a property exhausts its nature. In this paper, I hope to answer the questions: is structuralism compatible with qualia? And if so, to what extent?

¹ Lewis (2009)

In section I, I will outline the structuralist thesis, argue that it should be taken as a theory of *de re* representation, and present a brief argument for structuralism over quidditism. In section II, I will outline qualia theory and argue that it is largely compatible with a structuralist theory of properties.

I. The Structuralist Theory of Properties

Introduction to Structuralism

Structuralism is a theory about the nature of properties that states that properties are individuated by their nomological roles, and these nomological roles exhaust the essence or nature of a property. In his survey of structuralism, John Hawthorne characterizes the central tenet of structuralism as: there is some causal profile such that having that profile is necessary and sufficient for being that property.² Hawthorne's paper focuses on the thesis of *causal* structuralism. However, for the purpose of this paper I will be focusing on a property's *nomological* role rather than its causal role.³ Thus, I take the two central tenets of structuralism to be:

1. For any given natural property, there is some nomological profile such that having that profile is sufficient for being that property.
2. For any given natural property, there is some nomological profile such that having that profile is necessary for being that property.

Structuralism argues that what separates properties is not any underlying nature or essence, but purely a certain nomological role.⁴ For example, to have negative charge is

² Hawthorne (2001:362)

³ Although I focus on the nomological role of a property, I believe my arguments should nonetheless hold for causal structuralist positions as well. The causal structuralist claims that properties are individuated by their causal profiles.

⁴ The nomological role of a property can be specified through the Ramsey-Lewis technique ('Ramsification'), as suggested by Schaffer (2005) and Locke (2012). Take a world where there are four properties: A, B, C, D, E. There are three laws governing these properties: $A \rightarrow C$, $B \rightarrow D$, $A \wedge B \rightarrow E$, where

to repel other negatively charged things and attract positively charged things. It is, necessarily, *to play the negative charge role*. The nomological role for charge that I have outlined is undoubtedly overly-simplistic, but serves to illustrate what it means to play a particular nomological role.

Before we proceed, it is important to note that proponents of causal structuralism argue that it is only meant to apply to properties whose loss or gain by an object constitutes a “genuine change” in that object, or “genuine properties”.⁵ What are we to take “genuine properties” to mean? The distinction made by Shoemaker is between Cambridge properties, which he takes to be genuine, and mere-Cambridge properties, which he does not. The Cambridge Criterion provides a basis for what we can constitute as a genuine change:

Cambridge Criterion: The thing called ‘x’ has changed if he have ‘F(x) at time t’ true and F(x) at time t¹’ false, for some interpretation of ‘F,’ ‘t,’ and ‘t¹’.⁶

However, there are some changes that meet the Cambridge Criterion but are not genuine changes of the subject. Shoemaker calls these mere-Cambridge changes, and provides us the example of Socrates coming to be shorter than Theaetetus due to Theaetetus’ growth.

_N denotes a nomological relation. We can get the Ramsified lawbook by replacing each property with its own variable (F¹ ... Fⁿ) and conjoining the law statements. So, we say that for any object with F¹, there is a law that brings about F³, and when F¹ is coinstantiated with F², there is a law that brings about F⁵. This is an ‘open sentence’, and it defines the law-like relations between properties. These law-like relations are what we call a property’s nomological role. For a more concrete example, take a world with the property mass and Newtonian physics. Replace the property with a variable and conjoin the laws: an object with x will exert attractive force on other objects with x proportional to the product of their respective amounts of x divided by the square of the distance between them, and the net force on an object with x equals the product of its mass and its rate of acceleration. (Locke 2012:348 footnote 6)

⁵ Shoemaker (1998:207)

⁶ Shoemaker (1998:208)

So, a mere-Cambridge property is a property whose possession results in a change, but not a change in the subject. Examples of mere-Cambridge properties include: “historical properties like being over twenty years old and having been slept in by George Washington, relational properties like being fifty miles south of a burning barn, and such properties as being such that Jimmy Carter is President of the United States.”⁷ Cambridge properties are those that meet the Cambridge Criterion but are not mere-Cambridge properties. Presumably being 100 miles from Los Angeles is not a property whose possession by an object constitutes any sort of genuine change in the object itself versus the property of being 99 miles from Los Angeles, whereas being made of plastic is a property that constitutes genuine change in an object versus the property of being made of glass. It does not seem the property ‘being 100 miles from Los Angeles’ is the type of property that a theory of fundamental properties is interested in explaining.

However, it may seem question-begging to presume that the only properties we are interested in are those which cause genuine change in the world. Would not the existence of causally inefficacious properties disprove the thesis of structuralism? I do not think it is as problematic as it seems at first pass. What Shoemaker means by genuine properties seem similar to what Lewis refers to as “natural properties.” Hawthorne picks out this much in his stipulation of the two theses of structuralism. Consider the infinitely many properties relating to mass in the world: the property of having a mass of 50 pounds, the property of not having a mass of 49.9 pounds, the property of having a mass of 50 pounds or 49.9 pounds or 50.1 pounds, et cetera onto infinity. Any two objects share infinitely many properties, and do not share infinitely many others—this is true of

⁷ Shoemaker (1998:208)

both perfect duplicates and totally disparate objects. But clearly, in that list of infinitely many properties, there is one that tells us more about the object—about its similarity or dissimilarity to other objects, and about how it factors causally in the world. Having a mass of 50 pounds is the relevant property, not the others. These properties—ones whose sharing makes for resemblance, and whose possession is relevant to causal powers, are what Lewis calls *natural* properties.⁸ Natural properties are not disjunctive—having a mass of 50 pounds or 49.9 pounds or 50.1 pounds is not a natural property. Natural properties are also not negative—not having a mass of 49.9 pounds is not a natural property. These properties do not illustrate similarity or difference between objects, nor inform us about how an object figures causally into the world. Natural properties are properties upon which worlds are built: a full account of the natural or fundamental properties of the world would tell us all relevant information about properties in that world.

Now we can see how natural properties relate to what Shoemaker calls genuine properties: a property's possession or loss cannot constitute a genuine change in an object unless it is a natural property. The debate about properties is concerned with explaining the nature of these natural properties. So, I do not think it is problematic that the structuralist is only concerned with properties that confer bona fide causal powers.

How Should We Interpret Structuralism?

Having established the type of property structuralism seeks to explain, there seem to be three possible interpretations of the theses of structuralism:

⁸ Lewis (1983a:346-347)

1. **Intra-world identity:** within the actual world, properties are identical if they play the same nomological role.
2. **Inter-world identity:** across possible worlds, properties are identical if they play the same nomological role.
3. ***De re* modal representation:** possible worlds that do not differ structurally cannot differ in what they represent *de re* concerning a property.

The first of these possibilities, intra-world identity, is the thesis that purely within our own, actual world properties cannot be individuated if they play the same nomological role. So, if there are properties A and B within our world, and both have nomological role C, they must actually be the same property. A property could not have the same causal profile as negative charge and not *be* negative charge within the actual world.

The problem with this view involves two properties with symmetric nomological roles. Imagine there are four properties: A, B, C, and D. These four properties are governed by the laws: $A \text{ }_N\text{ } C$, $B \text{ }_N\text{ } C$, $A \ \& \ B \text{ }_N\text{ } D$, where $_N$ denotes a nomological relation. So, if only A is instantiated, C is brought about. If only B is instantiated, C is brought about. If both A and B are instantiated, then D is brought about. So, clearly these are different properties—they require coinstantiation for D. But, if we were to describe property A without reference to A or B, it would be: “a property that causes C when instantiated alone and when coinstantiated with another property (that also causes C when instantiated alone) causes D.” If we were to describe property B without reference to A or B, the description would be the same. The causal profiles are qualitatively identical when the references to specific properties are stripped. As such, a structuralist theory of intra-

world possibility would necessarily find A and B identical—even though they are not.⁹ The structuralist is left unable to differentiate properties with symmetric causal profiles. Of course, it is still possible to distinguish A and B from one another if the reference to the other property can be maintained. However, this is not a valid route for the structuralist. The nomological role of a property is given via a Ramsified lawbook, and Ramsifying the above lawbook tells us that A and B have the same nomological roles.¹⁰ So, the structuralist must either abandon individuating properties via the Ramsified lawbook of a world (which is to abandon structuralism), or abandon structuralism as a theory of intra-world property identity.

So, we cannot take causal structuralism to be a theory about property identity in the actual world—what about across possible worlds? The thesis of inter-world identity states that across possible worlds, properties are identical if they possess the same causal profile.¹¹ However, the multiplication of worlds only leads to a multiplication of problems for structuralism.¹²

Now that we have invoked possible worlds, we can imagine two worlds with *only* four properties, with the same lawful relationships as those formulated above. So, we have two worlds each with the lawful relations: $A_N C$, $B_N C$, $A \& B_N D$. Taking structuralism to be a thesis of inter-world property identity, it would state that across worlds properties are identical if they play the same nomological role. As demonstrated above, if we strip the references to other properties as in the intra-world example,

⁹ This objection is raised by both Hawthorne (2001: 373-374) and Locke (2012:355)

¹⁰ See footnote 4

¹¹ This is a view advanced by Shoemaker (1998:1), as well as Swoyer (1982:214) and Kistler (2002: 57)

¹² By ‘possible worlds’, I refer to worlds that *could have* existed. For example, if I could have attended Pomona College instead of Claremont McKenna College, then there is a possible world where I attend Pomona College and not Claremont McKenna College.

properties A and B appear to play the same causal role, and thus it now appears that across worlds, A and B are the same property, when that is clearly not the case.

A further objection to structuralism as a theory of inter-world identity applies as well: it is controversial to claim that there is something in virtue of which two things are identical. Per Lewis, there is nothing which makes something identical to itself—it just *is* itself.¹³ As such, it seems trivial to say that a property is identical with itself across possibilities *in virtue* of something. It seems more coherent to say that the property possesses the same causal profile across possibilities in virtue of its identity, but that is far-flung from the structuralist thesis—it implies that there is some essence beyond the causal profile upon which the causal profile is contingent (or necessary). That is precisely the view of properties that structuralism is seeking to avoid.

In dismantling one possibility for structuralism, Lewis' argument points towards another—structuralism as a theory of *de re* modal representation.¹⁴ Take the true statement, “T is six feet tall.” This is a statement about the actual world, where T falls in the class of things that possess the property of tallness. Now, take the statement, “Necessarily, T is six feet tall.” This is a modal statement—it applies across all possible worlds.¹⁵ To say that a thing *necessarily* is a certain way is to say that every possibility must represent the thing as being that way. So, for this statement to be true, T must fall within the class of things that possess the property of being six feet tall across all worlds. A theory of *de re* modal representation will tell us in virtue of what a possibility

¹³ Lewis (1986: 192-193)

¹⁴ Lewis' work was done on the identity of individuals across worlds, but is equally applicable to the identity of properties across worlds. Hawthorne (2001:373-375) and Locke (2012:356) advance this interpretation of structuralism.

¹⁵ A modal statement simply refers to a statement that applies across worlds—such as those beginning with ‘possibly’ or ‘necessarily.’

represents a thing as being a certain way. Under an identity theory of *de re* representation, a possible world represents T as being a certain way because there is an object in the possible world that *is* T. Under a counterpart theory of *de re* representation (explained below), a possible world represents T as being a certain way because there is an object in the world that is qualitatively similar to T.

What does it mean to take structuralism as a theory of *de re* representation? Take the property of being six feet tall, and let R^T be the nomological role realized by that property in the actual world. Under structuralism, a world represents the property of being six feet tall as being a certain way if and only if that world is a possibility where a property that realizes R^T is that way.¹⁶ Under this thesis, properties are *counterparts*.¹⁷ Counterparts are things that share some aspect across worlds—they are not identical, rather they are just qualitatively similar in some relevant way. The relevant aspects differ depending on the theory of *de re* modal representation. Under structuralism, the relevant aspect is the nomological role of a property. Two properties are counterparts if they share the same nomological role. It is important to note that counterpart theory does not require exact similarity for objects to be counterparts—there is flexibility about which aspects of a thing are essential to counterparthood. So, it may be the case that it is not necessary for two properties to share their entire nomological roles to be counterparts.¹⁸ In contrast, quidditism as a counterpart theory of *de re* representation would state that two properties are counterparts if they share the same quiddity.

¹⁶ Locke (2012:356)

¹⁷ Counterpart theory was first introduced by Lewis in “Counterpart Theory and Quantified Modal Logic” (1968)

¹⁸ Hawthorne (2001:375)

How does taking structuralism as a theory of *de re* representation as opposed to a theory of property identity solve the problems faced by intra- and inter-world identity theories? The problems faced by structuralism as a theory of intra- or inter-world identity are all *identity problems*. Symmetrical properties are problematic because structuralism takes them to be identical. The triviality of identity of properties is problematic because there does not seem to need to be anything in virtue of which two things are identical. Structuralism as a theory of *de re* representation does away with identity entirely, and so these identity problems fall away. Rather than claiming that two properties are *identical* between worlds, they are *counterparts*. So, instead of claiming that two symmetric properties are identical across worlds, we are claiming that symmetric properties are counterparts across worlds. Does this get us out of the bind? We're no longer discussing identity, so the identity problems raised by the intra- and inter-world theories fall away. There is no inherent contradiction in claiming that symmetric properties are counterparts. Symmetric counterpart properties are unproblematic because counterpart properties are still distinct, separate properties—counterparthood merely claims that the properties share some essential aspect that allows us to coherently refer to a property and its counterparts across worlds with a modal statement.

The question may now fairly be raised as to whether we are still dealing with a theory about the *nature* of properties—it may seem that by taking structuralism to be a theory of *de re* representation, we have morphed it into a theory about how we *refer* to properties. Presumably, a theory of the nature of properties will tell us something about the properties themselves—whereas a theory of *de re* representation seems to tell us about what a given world represents concerning those properties. The best way to

demonstrate that structuralism as conceived is still a theory about the nature of properties is to compare it with quidditism conceived as a theory of *de re* representation. Hawthorne formulates the quidditist position as follows:

If two worlds differ in what they represent *de re* concerning some property, but do not differ structurally in any way (i.e. have the same structural description), I shall call that a quiddistic difference. [Quidditism] is the doctrine that there are at least some cases of quiddistic difference between worlds.¹⁹

Under quidditism, the nature of properties is such that two worlds can differ in what they represent *de re* concerning some property but not structurally. So, in some possible world, a fundamentally different property could play the role that mass plays in the actual world. This would entail a difference in *de re* representation. However, the structure of the world is exactly the same—it's just that alternate-mass is playing the mass role. Structuralism does not allow for this—there cannot be two worlds that differ in what they represent *de re* concerning some property, but do not differ structurally in any way. There cannot be two structurally identical worlds in which the mass role is played by non-counterpart properties. To play the mass role in a possible world is to be a counterpart to the actual property mass, according to the structuralist. To be counterparts, properties must share an essential nomological role. So, for each property, there is a nomological role that is the essence of that property. This appears to tell us something about the properties themselves—and thus, their nature.

¹⁹ Hawthorne (2001:375)

An Argument For Structuralism

Now that I have outlined the thesis of structuralism, you may be wondering—why should I believe this theory? Although this is not the focus of my paper, I will sketch the most convincing argument for the thesis. The most straightforward and strongest argument is one from economy. Here it is, presented by Hawthorne:

The best case for thinking that the causal [nomological] profile of a property exhausts its nature proceeds... via the thought “We don’t need quidditative extras in order to make sense of the world.” Let us return to negative charge. All scientific knowledge about negative charge is knowledge about the causal [nomological] role it plays. Science seems to offer no conception of negative charge as something over and above “the thing that plays the charge role”. If there were a quiddity that were, so to speak, the role filler, it would not be something that science had any direct cognitive access to, except via the reference fixer “the quiddity that actually plays the charge role”. Why invoke what you don’t need? Unless certain logical considerations forced one to suppose that properties are individuated by something over and above their causal role, then why posit mysterious quiddities?²⁰

Science seems perfectly able to explain the workings of the world via the nomological roles of properties. Quiddities over and above causal profiles seem only to complicate the picture and provide no new explanatory power. Thus, it seems unnecessary to posit the existence of quiddities. We are left with two possibilities: structuralism as outlined above, or accept a form of quidditism without quiddities. Dustin Locke proposes the latter—he argues that the quidditist should reject that that properties are individuated by quiddities, and instead individuate properties by their numerical identity.²¹ Austere quidditism, as he

²⁰ Hawthorne (2001:368-369)

²¹ Locke (2012:357-358)

calls it, does not fall victim to Hawthorne's argument from economy—eliminate the quiddity, and there is no longer anything “over and above” the charge role, so the quidditist is no longer invoking something beyond the scope of science. Furthermore, austere quidditism is not a counterpart theory of *de re* representation—rather, it is an identity theory of *de re* representation. What a world represents *de re* concerning some property is not a matter of sharing any aspects under austere quidditism but a matter of numerical identity. Locke prefers austere quidditism to structuralism because he does not find any compelling reason to be a counterpart theorist about properties—and where there is no reason to be a counterpart theorist, we ought to be identity theorists about *de re* representation.²²

If we are to take structuralism seriously, the structuralist must be able to respond to this objection. Although this is not the purpose of my paper, I will sketch a possible line of response for the structuralist.

Counterpart theory was proposed by Lewis as an answer to the problem of accidental intrinsics for individuals. The classic problem of accidental intrinsics is as follows: take what a world represents *de re* concerning an individual to be a matter of numerical identity. Now take Humphrey—in the actual world, he has five fingers on his left hand. Having five fingers on his left hand is an intrinsic property of Humphrey. However, it does not seem to be an essential property of being Humphrey—he could have had six fingers on his left hand. So, there is some possible world that represents Humphrey as having six fingers. If representation *de re* is a matter of numerical identity, then Humphrey—who exists in both worlds—has both five fingers on his left hand and

²² Locke (2012:357-358)

six fingers on his left hand. This clearly cannot be the case—and it is why Lewis endorses counterpart theory for individuals. In the actual world Humphrey has five fingers on his left hand, in some possible world a counterpart of Humphrey has six fingers on his left hand.²³

Does the same problem apply to properties? If it does, then we have a reason to prefer a counterpart theory of *de re* representation for properties. Locke claims properties do not have accidental intrinsics.²⁴ I think it is possible that they do. Take a property P that has some nomological role R in the actual world. It seems plausible to argue that *realizing R* is an intrinsic property of P.²⁵ However, according to the quidditist, realizing R is not essential to P. So there is some possible world where P does not realize R. If we take property individuation to be a matter of numerical identity, then P both realizes role R and does not realize role R. If realizing R is an intrinsic property of P, then this cannot be the case in the same way Humphrey cannot have both five and six fingers on his left hand. So, we need a counterpart theory of *de re* representation for properties to avoid the problem of accidental intrinsics.

Having outlined structuralism—specifically, structuralism as a theory of *de re* representation—and why one might believe it, I can now attend to the focus of this paper—the relationship between structuralism and *qualia*.

²³ Lewis (1986:199-200)

²⁴ Locke (2012:358 footnote 31)

²⁵ This is by no means a given—I imagine many will reject it outright. However, it at least seems plausible that *realizing R* is a property that is independent of accompaniment or loneliness, is not a disjunctive property, and is not a negation of a disjunctive property, and thus meets the criteria of intrinsicity.

II. The Compatibility of Qualia Theory and Structuralism

The Qualia Debate

Perhaps the most peculiar and controversial properties are those that comprise the phenomenal character of experiences. The phenomenal character of an experience refers to the “what it is like” of having that experience. There is some “qualitative” or “phenomenal” aspect to experience—something it is like to feel an itch, or a pang of hunger, or the prick of a needle. How could such properties be controversial? Surely we can all agree that we have some form of conscious phenomenal experience. The controversy surrounding phenomenal properties is not about whether they exist—you will be hard pressed to find someone who denies that there is something it is like to feel an itch or a pain. Rather, the question is whether phenomenal character are *qualia*, where to be a quale is to have certain features that I will outline below. For the purpose of this paper, I will use “phenomenal character” to refer to the felt qualities of experiences that is generally agreed to exist. I will use “qualia” to refer to an expansionist view of phenomenal character.

To begin, I will introduce three theories of phenomenal character. The first is *functionalism*, which states that all mental states are comprised entirely of their relations to sensory inputs, behavioral outputs, and other mental states. For example, pain might be a mental state caused by the sensory input of being pricked with a needle, that causes the belief “I am in pain” and the behavior of recoiling or wincing. This is clearly not an exhaustive functional profile, but it provides a rough idea of how the functionalist

characterizes a mental state. Under functionalism, the phenomenal character of an experience is contained within the functional role of that experience.

A second theory of phenomenal character is *representationalism*, which states that the representational content of an experience exhausts the phenomenal character of the experience. What does this mean? Amy Kind offers the following analogy to a painting:

Consider a painting of Santa Claus. In the painting, Santa Claus is represented as having certain properties: wearing a red suit and hat, having a big belly, having a white mustache and beard, etc. Importantly, these are properties of what the painting represents and not properties of the painting itself—the painting certainly does not wear a red suit, have a big belly, etc... But in addition to the properties of what is represented by the painting, there are also properties of the painting itself: being flat, being square, being covered with paint, etc.²⁶

The representationalist denies that experiences, such as a mental image of Santa Claus, have properties themselves such as flatness or squareness. They claim that the only properties of an experience are representational properties—and therefore phenomenal character must be exhausted by what an experience represents.

Finally, we have the *qualia theorists*, who argue that experiences do have properties analogous to those of the painting itself. While they may not think a mental image has squareness or flatness the way a painting does, they maintain that there are intrinsic properties to a mental image (or any experience) beyond the representational

²⁶ Kind (2001:145-146)

contents of the image, and that these properties constitute the phenomenal character of an experience. These properties are called qualia.

Introspectable, Intrinsic Qualities of Experiences

In this section, my goal is to answer the question: *taking structuralism to be true, can qualia exist?* I will begin with determining if the most basic notion of qualia—that they are intrinsic, introspectable properties of experiences—is compatible with structuralism. Then, I will consider other aspects of qualia advanced by various qualia theorists and determine if they are compatible with structuralism. The end result will be the maximally expansionist view of qualia that is compatible with structuralism. I am not seeking to make a pro- or anti-qualia argument—merely to explore the implications of structuralism, if true, on the qualia debate.

Before I explore the qualia view, I feel it is important to address how the thesis of structuralism is different from functionalism lest anyone think I am retreading a familiar debate. Qualia theory's incompatibility with functionalism seems to imply an incompatibility with structuralism—after all, functional roles do not appear to be very far off from nomological roles. However, the differences functionalism and structuralism will lead us to very different conclusions about their compatibility with qualia theory. Most obviously, structuralism is a theory about properties while functionalism is a theory about mental states. However, one might think that qualia being exhausted by their functional roles is equivalent to qualia being exhausted by their nomological roles. However, 'functional role' in the sense used by functionalists is limited only to relations between sensory inputs, behavioral outputs, and other mental states. A property's

nomological role, on the other hand, can extend far beyond sensory inputs, behavioral outputs, and relations to other mental states. A functional role is a very limited role—and nomological role can be comprised of any relations the property plays a part in.

Functionalism is a much narrower thesis than structuralism—and this will result in different treatments of qualia.

So, what is the most basic notion of qualia that robust qualia theorists agree upon?

One thing almost everyone seems to agree on is that qualia are a type of phenomenal character, as described above. They encompass the phenomenal aspects of experiences:

“ ‘Qualia’ is an unfamiliar term for something that could not be more familiar to each of us: *the way things seem to us*. ”²⁷

“By ‘qualia’, I mean the properties of experiences in virtue of which there is something it is like (in the phrase made famous by Nagel) to have those experiences.”²⁸

“Qualia, if there are such, are properties of sensations and perceptual states, namely the properties that give them their qualitative phenomenal character – those that determine “what it is like” to have them.” (Shoemaker, 1991, p. 121)

[Q]ualia are simply those features, whatever they may be, which comprise the phenomenal or subjective aspects of bodily sensations and perceptual experiences.”²⁹

These quotations, despite coming from philosophers on different sides of the debate about qualia, can begin to provide a sketch of qualia.

²⁷ Dennett (1988:1)

²⁸ Stoljar (2001:254 footnote 3)

²⁹ Tye (1994:160)

The first inference we can draw about the nature of qualia from these quotations is that qualia are meant to be properties of experiences. They are not properties of external objects, but rather properties of something mental. Depending on who you ask, qualia may be properties of the *event* of having an experiential state, or of the repeatable experiential states themselves.³⁰ This may appear to be an innocuous question for the structuralist—after all, structuralism applies to all properties, does it not? Not so fast. Remember, structuralism applies only to properties whose possession or loss makes for genuine change in the world. Do properties of events make for genuine change? Do they have a nomological role? I cannot think of a case where a property of an event plays a nomological role—it is the nomological roles of the properties of the objects involved in the event that dictate the event. As such, it appears the structuralist should take qualia to be properties of experiences as objects.

The second suggestion about qualia to be gleaned from these quotations is that qualia are *the way things seem to us*. As Kind helpfully points out, the notion of seeming has epistemic implications—that qualia are in some way *introspectable*.³¹ It would be incoherent to say that qualia are the way things seem to us, and deny that we have access to qualia. This will be our first central feature of qualia.

What do we mean that qualia are introspectable? On the most basic level, when we introspect on an experience we are aware there is something that it is like to have that particular experience. However, past this, the literature is scattered on what exactly we can introspect and the contents of that introspection.

³⁰ Lewis (1995:140-141)

³¹ Kind (1999:149)

For now, simply suppose a quale is just some property of an experience, and that property is introspectable. That is, when I focus my attention inwards on an experience, there is some property of that experience that I am aware of. This seems utterly uncontroversial—when we introspect, of course there are properties of our experience that we can be aware of.³²

What would structuralism say about such a property? It depends on how we interpret the claim that qualia are introspectable. If it is a claim about how qualia are in the actual world, then structuralism would not appear to say much. It may just be a contingent fact that qualia are introspectable due to the laws being the way they are and other contingent facts about the actual world. There is no conflict with structuralism here.

However, if the claim is that qualia are *necessarily* introspectable, then *being introspectable* must be a part of a quale's nomological role. If qualia are necessarily introspectable, this is a claim about the criteria for counterparthood—a property cannot be a counterpart of a quale unless it is introspectable. This is a strong thesis—it claims being introspectable is included in the laws that govern qualia. Despite the strength of this thesis, it is still available to the qualia theorist under structuralism—there are no logical or theoretical contradictions here. Structuralism does not prevent introspection as part of a property's nomological role.

There is a stronger interpretation of what it is for a quale to be introspectable—namely, that through introspection, we are able to *know what* a quale is in its entirety. That is, through introspection, we can gain a full understanding of a quale—know everything there is to know about it. Lewis calls this the *identification thesis*. He phrases

³² As mentioned earlier, the central debate in this arena is whether these properties are purely representational or something more.

it as follows: “when I have an experience with quale Q , the knowledge I thereby gain reveals the essence of Q : a property of Q such that, necessarily, Q has it has nothing else does.”³³ Although this is not necessarily a commonly-held or essential view to the robust qualia theorists, I will entertain this view in the interest of exploring the maximally expansionist view of qualia that structuralism can accommodate.

The identification thesis under structuralism would stipulate that we have full access to a quale’s nomological role through introspection. So, to be able to introspect the pain quale would be to know precisely what the nomological role of the pain quale is—what brings it about, and what it brings about. Structuralism does not seem to have any problem with this—there is no aspect of structuralist metaphysics that would stipulate that the full nomological roles of properties are inaccessible through introspection. However, the claim that we have full access to the nomological role of a quale through seems extremely tendentious at best.

Can the robust quidditist accept the identification thesis? Recall that robust quidditism posits that properties are individuated by their quiddities. If the identification thesis is true, it would state that we can know the essence or quiddity of qualia. Proponents of quidditism typically argue that a property’s quiddity is beyond our epistemic reach—but this appears to be a consequence of rejecting the identification thesis, rather than an inherent conflict with quidditism.³⁴ It is unclear what having epistemic access to a quiddity would entail. However, it seems this is a more plausible claim than the structuralist must make—it seems more plausible to say we have introspective access to the essence of a quale than to its entire nomological profile.

³³ Lewis (1995:142)

³⁴ Lewis (2009:217)

Continuing to build upwards, references to robust qualia also typically hold that qualia are *intrinsic*:

“[I]t will settle the matter that is really at stake: whether there are intrinsic mental features of our experience.”³⁵

“[W]hen you attend to a pain in your leg or to your experience of the redness of an apple, you are aware of an intrinsic quality of your experience.”³⁶

“Qualia realism...is the view that there are intrinsic mental features of our experience.”³⁷

What do robust qualia theorists mean when they say that qualia are intrinsic? Proponents of qualia are decidedly vague on the matter. Harman defines an intrinsic quality as “a quality something has in itself, apart from its relations to other things.”³⁸ Typically, robust qualia theorists simply refer to qualia as intrinsic properties of experiences, and offer no further elaboration. However, the way in which the intrinsicity of qualia is used in arguments against functionalism is informative of it is intended to be interpreted:

“Properties that ‘seem intrinsic’ at first often turn out on more careful analysis to be relational.”³⁹

“[T]he causal analysis of a mental state implies nothing about the intrinsic nature of that state.”⁴⁰

“[Qualia] present themselves as intrinsic and non-relational properties of visual experience.”⁴¹

³⁵ Block (1990:74)

³⁶ Harman (1990:33)

³⁷ Block (1990:53)

³⁸ Harman (1990:33)

³⁹ Dennett (1988:397)

⁴⁰ Nagel (1970:397)

⁴¹ Loar (2002:1)

In the qualia debate, intrinsic seems to be taken as non-relational. Objections to functionalism from robust qualia theorists often proceed along the lines of:

- P1) Qualia are intrinsic properties of mental states
- P2) Under functionalism, mental states are exhausted by their relations to inputs, outputs, and other mental states
- P3) Relational properties are non-intrinsic
- IC) Functionalist mental states do not have intrinsic properties
- C) Functionalist mental states cannot accommodate qualia

On first gloss, this seems reasonable. Paradigmatic intrinsic properties include mass and charge—properties that an object would have regardless of external stimuli. Paradigmatic extrinsic properties include being taller than Bob, or living in the United States—properties that require some relation to another object in order to be made sense of.

However, I believe a slightly more precise definition of intrinsic is required for determining intrinsic qualia's compatibility with structuralism. For example, take the property of *having longer fingers than toes*. This seems like an intrinsic property—it is not contingent upon anything external. Yet, it also addresses a relation. It is clearly of a different class than *living in California*, which seems a paradigmatic extrinsic property. What makes having longer fingers than toes intrinsic, if not being non-relational? Lewis is informative here, suggesting that “if something has an intrinsic property, then so does any perfect duplicate of that thing; whereas duplicates situated in different surroundings will differ in their extrinsic properties.”⁴² Having longer fingers than toes is intrinsic because a duplicate of the possessor of that property, placed in different circumstances, could still have longer fingers than toes. Living in California is extrinsic because a

⁴² (Lewis 1983b:197)

duplicate of the possessor of that property, placed in suitably different circumstances, would not live in California.

Lewis' definition of intrinsic deserves further explication. Roughly, he argues that a property is intrinsic if can exist independently of loneliness or accompaniment.

Loneliness refers to an object existing by itself in a universe.⁴³ Accompaniment refers to an object existing with other objects. So, an intrinsic property must be a property that can be had by an object in a lonely universe, had by an object in an accompanied universe, or not had by an object in a lonely or accompanied universe.⁴⁴

Before we address qualia, the question must be answered: is it possible for *any* property to be intrinsic under structuralism? It is easy to see why one might think that all structuralist properties are extrinsic—if they are individuated by their nomological roles rather than any underlying nature or essence, are they not inherently dependent upon relations and thus accompaniment? Not so fast. To reframe the issue: what it is to have mass for a structuralist is to have a property that plays the mass role. Is it coherent for something to play the mass role, even if that role is impotent in a lonely world? It does not seem incoherent to say that a lone object possesses a property that plays the mass role, despite the fact that the mass role may not be called into play. If we take a simplified mass role—objects with mass attract other massy objects—it seems that this role could still exist even in a world with only one massy object. A parallel may be drawn from dispositions—take fragility, the disposition to break when struck. A lonely object could still be fragile, despite there being nothing to break it in the universe.

⁴³ Langton & Lewis (1998:334-335)

⁴⁴ Lewis also prohibits properties that are disjunctive or negations of disjunctive properties to deal with cases like the property of being “grue”—either green or blue. This property is independent of accompaniment or loneliness, but is clearly not intrinsic.

It is worth asking if a property *playing a role* requires some law of nature, and thus cannot exist in a lonely universe. Here, I think, we should be careful not to confuse laws of nature with objects. Laws stipulate the relations between objects—they are not objects themselves. When we specify a lonely universe, we simply mean there is only one *object* in that universe, not that it is a lawless universe. Therefore, the presence of laws is unproblematic in a lonely universe. Therefore, nomological roles can be intrinsic properties.⁴⁵

Having established that intrinsic properties are possible under structuralism, let us now turn to the question of whether qualia can be taken as intrinsic under structuralism. Qualia would be intrinsic if they are independent of accompaniment or loneliness. If a particular experience, say, the experience of seeing red, possesses the quale *R* when the experience exists alone and when the experience is accompanied, then *R* is an intrinsic property of the experience of seeing red. If all experiences possess their qualia whether accompanied or alone, then qualia as a class of property are intrinsic.

So, could the structuralist allow that qualia are independent of accompaniment or loneliness? I see no reason why this wouldn't be the case. The structuralist says a world cannot differ in what it represents *de re* concerning some property while maintaining the same structural profile. There does not seem to be any inherent conflict between that statement and the statement that having qualia can be independent of loneliness or accompaniment. So long as playing a role can be intrinsic, then so too can the properties that play those roles. The structuralist thesis provides no reason to reject the intrinsicity of qualia.

⁴⁵ See Molnar (1999 and 2003) for further explanation of powers as intrinsic properties of their bearers.

Additional Aspects of Qualia

Beyond being intrinsic, introspectable properties of experiences, the aspects of qualia are not quite so agreed upon. Various theorists have advanced theses such as *ineffability*, *subjectivity*, and *privacy*. These theses are typically argued for via thought experiments. I chose to examine introspectability and intrinsicity independent of any thought experiments due to their widely held status as essential components of qualia. However, the less-agreed-upon aspects of qualia are best illustrated and argued for via thought experiments. In this next section, I will examine prominent thought experiments used by various qualia theorists, their implications for qualia, and determine if the thought experiments are coherent under a structuralist theory of properties. Once I have determined which thought experiments the structuralist can accept as plausible, we will be left with the aspects of qualia that a structuralist can accommodate. There is a fair amount of overlap in the aspects of qualia that these thought experiments are meant to demonstrate, but I think it is valuable to examine all of them as they are often employed in different contexts.

Nagel's Bat

One of the seminal thought experiments in qualia is Nagel's bat. Nagel asks us to consider a bat—a highly evolved mammal that interacts very differently with the world than we do as humans. This bat has conscious experience. But can we imagine what it is like to be the bat? Nagel argues no—what it is like to be a bat is so foreign from what it is like to be a human (due to bats' use of novel sensory apparatuses such as echolocation)

that, even if we had all of the physical or functional information about a bat, we could not imagine what it is like to be a bat. Even though we could imagine ourselves flying and hanging upside down and eating insects, we can only imagine what it would be like from the human perspective. We would miss the “subjective character of experience” that a bat has.⁴⁶

What aspects of qualia are revealed through the bat thought experiment? One aspect of qualia that seems to fall out is that qualia—at least across minds with very different experiences—are indescribable, or *ineffable*. There is no way for us to describe what it might be like to be a bat that captures the bat’s qualia. Human language cannot access the facts of the bat’s subjective experience, and therefore it seems qualia (at least those utterly foreign to us) are indescribable. Another aspect of qualia that follows from the bat experiment is that qualia are *subjective*—what it is to have a particular experience (such as hanging upside-down from a tree) as a human is very different from what it would be like as a bat.

It may seem to follow from ineffability and subjectivity that qualia are *private*—that is, it is impossible to access what it is like to be someone else. The argument would proceed as follows: if qualia can differ across bats and humans, presumably they can differ across more similar organisms, perhaps even between humans. And, if we are unable to describe the qualia of an experience, then it appears that it would be impossible to access the qualia of others. Nagel claims he is not advancing this thesis, however—he believes that given sufficient similarity to a subject, it is possible to take up her point of

⁴⁶ Nagel (1974:438)

view and at least roughly access what it is like to be her in a particular circumstance.⁴⁷

Here, Nagel assumes that 1) human minds and perceptions are similar and 2) that organisms with similar minds and perceptions have similar phenomenal characters to their experiences. Rather than arguing that we are unable to access the phenomenal characters of specific experiences, Nagel is advancing the argument that we are unable to access a certain type of experience—that is, the subjective character of experience of minds that are very different from our own. I will call this *weak privacy*.

Applying structuralism to Nagel's bat, is the thought experiment still feasible? Is there still an unknowable "what it is like" to qualia if they are individuated by their nomological roles? It seems to me the structuralist can accept that it is impossible to understand what it is like to be a bat. Even if there is some nomological profile that is necessary and sufficient for being a bat quale, it may be the case that as humans, we have some mental or epistemological limitation that prevents us from grasping the complete implications of such a nomological profile—or even knowing the complete nomological profile in the first place.

What could these limitations be? One possibility is property dualism—the thesis that there are physical properties and mental properties, and these are distinct types. Under property dualism, qualia are non-physical properties. If qualia are non-physical properties, then at least a piece of their nomological roles may be non-physical. It seems that science can only tell us about the physical world. If this is the case, then it may be impossible to know the full nomological role of a bat quale, and thus impossible to know what it is like to be a bat.

⁴⁷ Nagel (1974:441)

Another possibility is that humans simply lack the cognitive power to comprehend the nomological role of a bat quale. Consider the difference between being able to read a sentence and knowing what that sentence means. It may be the case that we can discover the nomological role of a bat quale, but not be able to grasp the implications because we lack the necessary bat-mind language.

Inverted Spectrum

One of the most common thought experiments used by proponents of qualia is the inverted spectrum. Imagine that there are two people, actual Bob and clone Bob. They are physically identical. For whatever reason, clone Bob's color experiences are the inverse of normal—where actual Bob sees a blue sky, Bob sees a red one. So, what it is like for clone Bob to see the sky is different from what it is like for actual Bob to see the sky—as actual Bob is having an experience with blue qualia, while clone Bob is having an experience with red qualia. However, clone Bob is not aware that his experience is inverted relative to Bob—he refers to the sky as blue, grass as green, stop signs as red, and so on. Furthermore, his mental states and behavior are identical to those of actual Bob, who sees colors normally. The typical formulations of the thought experiment take actual Bob and clone Bob to be functionally identical, despite the phenomenal characters of their experiences being quite different.⁴⁸

Because actual Bob and clone Bob are functionally and physically identical yet differ with regards to the phenomenal character of their experiences, the possibility of inverted spectra implies that qualia are *irreducible* to physical or functional states.

⁴⁸ Where 'functionally identical' refers to having identical relations between physical inputs, mental states, and behavioral outputs.

Furthermore, there seems to be no way for them to communicate that their experiences differ phenomenally, nor even expect that they do differ. Following from the plausibility of this thought experiment is the apparent *subjectivity* of qualia—what a particular experience (such as seeing the sky) is like from one person’s perspective may differ from what it is like from another’s, despite similarities between the persons. It may be rightly asked if we can really say that Bob and clone Bob are having the same experience—after all, it differs phenomenally. However, they are both having the experience of *seeing the sky*. The phenomenal features of this experience may differ, but it is nonetheless an experience of the same thing. Not only this, but qualia also appear to be *private* and *ineffable*—that is, interpersonal comparisons of qualia are impossible, and it is impossible to describe qualia via language.

If we assume structuralism to be true, can the inverted spectrum scenario be metaphysically possible? It does not stipulate that the properties are structurally identical, merely functionally identical. So, it may be the case that there are other parts of the nomological role that go beyond the functional relations characterized by the thought experiment—and that part of the nomological role may differ in some way. If this is the case, then there is no problem—the qualia differ with regards to their nomological roles, and are therefore different properties under structuralism. This seems a plausible case to me—there may be fine-grained nomological features of qualia that escape our current conception that necessarily differ with a difference in phenomenal character. However, structuralism cannot accept a scenario where the full nomological role of each quale is identical yet they differ phenomenally—this would be a case of quiddistic difference. That brings us to our next thought experiment.

Zombies and Absent Qualia

Absent qualia thought experiments take one of two forms: zombies or duplicate systems.

The zombie formulation asks us to imagine a world that is isomorphic to our own, but where the inhabitants are “zombies”—that is, their experiences lack qualia. These zombies still have mental states identical to ours, but these mental states lack any phenomenal character. The argument goes that if this is conceivable, then it is possible—and if it is possible, then it must show that qualia are non-physical/non-functional. This is the conclusion that qualia are *irreducible* to physical or functional states.

Assuming structuralism to be true, it cannot accommodate zombies much in the same way it cannot accommodate inverted qualia. We are given two structurally isomorphic worlds, and therefore these worlds cannot differ in what they represent *de re* concerning any properties. If qualia in one world were absent (that is, they possessed the same nomological profile but lacked phenomenal character) then there would be a phenomenal difference between properties, so the worlds would differ in what they represented *de re* with respect to qualia, while not differing structurally. This cannot be the case under structuralism as a theory of *de re* modal representation.

The other formulation of the absent qualia argument was proposed by Ned Block.⁴⁹ He asks us to imagine a system of one billion people using radios to each simulate the action of a neuron, replicating the functional organization of a brain. Would such a system have consciousness, and thus qualia? Block argues that it seems absurd to

⁴⁹ Block (1978:279)

think so. If it is the case that a functional duplicate of the brain is not conscious, then it follows once again that qualia are irreducible to functional states.

Whether or not the structuralist will deny the possibility of such a system having qualia will be a function of the complete structural profile of a quale. If it is the case that qualia require particular physical systems to be instantiated, then the structuralist will deny that such a system could have qualia. For example, imagine it is part of the nomological role of qualia that they are instantiated only by *neurons* firing in a particular way. The radio brain does not have neurons, and therefore would not be able to instantiate qualia.

On the other hand, if qualia merely require some brain-like system to be instantiated, then it seems the structuralist could allow for Block's radio brain to have qualia. Instead of being instantiated by neurons firing, perhaps qualia can be instantiated by any neuron-like things interacting in a certain way. If this is the case, and the radio brain is sufficiently neuron-like (or whatever qualia require to be instantiated), then it is plausible under structuralism that the radio brain has qualia. The determination of whether or not a particular system has qualia depends on just how narrow the nomological profiles of qualia are.

Or, it could also be the case that qualia require something non-physical and non-brain-like to be instantiated—in which case the radio brain would likely lack qualia. Of course, whether qualia require a particular physical system for instantiation, a functionally similar system, or something else entirely is the very debate that this thought experiment is meant to solve. Structuralism provides no further insight.

Mary

A seemingly similar case to that of Nagel's bat is that of Frank Jackson's Mary.⁵⁰

Mary is a brilliant color scientist who is—for whatever reason—investigating color vision from within an entirely monochrome room. Assume she is able to acquire *all* physical information about color vision from within the room. Sometime after learning all of this information, she is released from the room into the world of color. Does she learn something? The intuitive response is yes, she learns *what it is like* to see color, and from this gains a more thorough understanding of color vision. Therefore there is something non-physical about qualia. Qualia are *irreducible* to physical facts.

The structuralist does not appear to have any qualms with Mary learning something in this scenario. She may possess all of the physical information about color vision, but that does not mean she possesses all of the *structural* information about color vision. Such a move by the structuralist of course requires that there is information relating to color vision that is not physical—a somewhat controversial claim, but one that comports with Jackson's argument.

Perhaps a more interesting and illuminating exploration of the Mary case's implications on qualia under structuralism is to revise it so that Mary has all of the structural information about color vision, rather than all of the physical information.⁵¹ She would then necessarily have total knowledge of the nomological role of every property at play in the process of color vision, including any qualia. If Mary has complete knowledge of the nomological roles of qualia associated with color vision, then she must

⁵⁰ Jackson (1982:130)

⁵¹ It is likely the case that the thought experiment would need to be altered in some way for this to be the case. It seems impossible to convey all nomological information via any method that is currently conceivable.

know what it feels like to see red. Therefore, she could not learn anything new upon leaving the room.

What Aspects of Qualia Survive?

It turns out structuralism is fairly compatible with qualia theorists' thought experiments, given some qualifications. Nagel's bat survives so long as humans have some epistemic or cognitive limitation that prevents us from accessing or comprehending the full nomological role of a bat quale. Spectrum inversion can be accommodated if the nomological roles of qualia extend beyond their physical and/or functional roles, and the full nomological roles of inverted qualia differ. Jackson's radio brain could lack qualia if qualia's nomological profile requires something non-functional for instantiation. Mary could learn something new upon seeing color for the first time, given that she did not have access to all of the structural information about color vision. The only thought experiment that seems utterly implausible under structuralism is the possibility of a zombie world.

From these surviving thought experiments, it is plausible for a structuralist to claim that qualia are subjective, ineffable, private, and irreducible to functional or physical facts.

III. Conclusion

I began by examining the structuralist theory of properties, which claims that properties are individuated by their nomological roles. I found the most plausible interpretation of the structuralist thesis to be theory of *de re* representation that states that two worlds cannot differ in what they represent *de re* concerning some property without differing structurally.

I then set out to determine if structuralism is compatible with qualia theory. Qualia theorists state that there are intrinsic, introspectable properties to mental states that comprise the phenomenal aspects of experience. This thesis is in conflict with the representationalist and functionalist theses. The representationalist claims that the phenomenal character of an experience is exhausted by the representational content of the experience. The functionalist claims that the phenomenal character of an experience is exhausted by the experience's relations to sensory inputs, behavioral outputs, and other mental states.

Qualia theory's incompatibility with the functionalist thesis seemed to imply incompatibility with structuralism—on first pass, a nomological role does not appear so different from a functional role. However, I argue that structuralism's consideration of the full nomological role of a property allows it to accommodate the majority of qualia theory. By taking introspectability to be a piece of a quale's nomological role, the structuralist can allow for the introspectability of qualia. By taking powers to be intrinsic properties of their bearers, the structuralist can allow for intrinsic qualia.

Having established that the key components of qualia—that they are intrinsic, introspectable properties of experiences—I then examined thought experiments employed by qualia theorists to flesh out further aspects of qualia such as ineffability, privacy, subjectivity, and irreducibility. I found the majority of these thought experiments to be compatible with structuralism, although some required qualifications.

Structuralism and qualia theory are compatible theses—and as such, neither theory can be used to refute the other. The qualia theorist has no need to reject structuralism due to her views on the nature of qualia, and likewise the structuralist has no need to reject qualia theory due to his views on the nature of properties.

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