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KRIPKE, CHALMERS AND THE IMMEDIATE PHENOMENAL QUALITY OF PAIN

by

Jessica Owensby-Sandifer

Under the Direction of Eddy Nahmias

ABSTRACT

One common element of Kripke's and Chalmers' reactions to physicalist theories of mind is their reliance upon the intuition that concepts about conscious experiences are essentially identified by the "immediate phenomenal quality" of the conscious experience, how the experience feels from the subjective point of view. I examine how Kripke's and Chalmers' critiques require that concepts about conscious experiences be identified by their subjective feel and then move on to provide some ways in which this intuition about concepts of conscious experience could be wrong. Specifically, the intuition is not consistent with our intuitions about unusual cases reported by pain researchers and does not take such cases to be genuine cases of pain. These inconsistencies weaken the intuition, making it problematic for any critique of identity theory or physicalism to rely heavily upon it.

INDEX WORDS: Consciousness, Mind, Kripke, Chalmers, Pain, Physicalism, Identity Theory, Mind-Body Problem

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by

JESSICA OWENSBY-SANDIFER

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2006

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CHAPTER 1 : THE SIGNIFICANCE OF THE IPQ INTUITION

1.1 INTRODUCTION

In January 1970, Saul Kripke gave his now classic lectures at Princeton University on modality and semantics, leaving the philosophical community stunned and perplexed. In the last of these three lectures, which have been published in *Naming and Necessity* (1972), Kripke argued that his ideas have some surprising implications for the philosophy of mind. Twenty-six years later in *The Conscious Mind* (1996), David Chalmers presented his bold argument for property dualism, flying in the face of the popular physicalist thesis, the thesis that everything, including the mind, is physical. Although there are important differences between their arguments, one common element of Kripke's and Chalmers' reactions to orthodox theories of mind is their reliance upon the intuition that concepts about conscious experiences are essentially identified by the "immediate phenomenal quality" of the conscious experience or how the experience feels from the subjective point of view (1972: 152). I will hereafter call this the *IPQ intuition*. I will examine how Kripke's and Chalmers' critiques require that concepts of conscious experience be identified by their immediate phenomenal quality and then move on to provide some ways in which this intuition about concepts about conscious experiences could be wrong.

1.2 WHY KRIPKE'S ARGUMENT REQUIRES THE IPQ INTUITION

One of the more controversial suggestions Kripke makes in *Naming and Necessity* is that there are serious problems with identity theory, the theory that phenomenal concepts, such as the concept of pain, are identical with brain processes. When we take Kripke's particular theory of reference, problems with identity theory arise. After quickly looking at identity theory's central thesis, I will summarize Kripke's account of reference and explain how it aids his attack on identity theory.

Although there are many flavors of identity theory in the philosophy of mind, identity theory in general claims that mental states are identical to brain states (Place 1956; Smart 1959). Succinctly summarizing identity theory, J.J.C. Smart noted that "Sensations are nothing over and above brain processes" (1959: 62). The identity used often by philosophers to capture the idea that conscious states are brain states is "pain is C-fibers firing." With respect to identity theorists, Kripke remarks, "These philosophers, whose views are expounded in vast literature, hold to a thesis called 'the identity thesis' with respect to some psychological states. They think, say, that pain is just a certain material state of the brain or of the body, or what have you – say the stimulation of C-fibers. (It doesn't matter what)" (98). As Kripke has adopted this example, let's take a moment to examine this identity. "Pain is C-fibers firing in the brain" is an empirical claim, resulting not strictly from conceptual analysis, but from evidence in cognitive neuroscience. Identity theory places "pain" on a par with natural kind terms such as "water" and "heat". Natural kinds are simply "groups of objects whose members are governed by the same set of laws and whose properties are not relativized to any particular personal interest" (Hardcastle 1995: 4). Consequently, Kripke's strategy for

arguing against identity theory will be to assume that identity theorists are analyzing pain as a natural kind and show how such an assumption leads to the untenable consequence that the concept of pain is *not* identified by "its immediate phenomenal quality" (152). But to understand why pain's being a natural kind implies the IPQ intuition is false, one must understand how Kripke's critique of identity theory relies on his ideas about reference.

Kripke's theory of reference argues that names are not short for definite descriptions. Previously, Frege and Russell thought that a name was synonymous with some description, that is, that names stood in for a description of some object (Kim 1995: 440). According to Kripke, definite descriptions are too fickle to pick out the correct objects in all possible worlds. Take for instance, 'Michael Jordan was the first player to earn MVP of the NBA finals four times'. If we use this identity as a definition of Michael Jordan, then Michael Jordan is whoever turns out to be the first player to earn MVP of the NBA finals four times. In this case, 'Michael Jordan' picks out Kobe Bryant in some other possible world because we can imagine that Kobe Bryant, rather than Michael Jordan, might have been the first player to earn MVP of the NBA finals four times. In some worlds, 'Michael Jordan' does not pick out the Michael Jordan we know. As Kripke succinctly puts it,

> Suppose the reference of a name is given by a description or a cluster of descriptions. If the name means the same as that description or cluster of descriptions, it will not … necessarily designate the same object in all possible worlds, since other objects might have had the given properties in other possible

> worlds, unless (of course) we happened to use essential properties in our description. (57)

Because our intuition is strong that the name 'Michael Jordan' should pick out the particular human being Michael Jordan in all possible worlds, Kripke rejects Frege's and Russell's theory of naming in favor of his own.

In Kripke's theory of naming, names get their referent at some baptismal moment where speakers associate names with referents by saying 'This will be called *X*' or 'The such and such will be called *X*'. Rather than standing in for some description, names under Kripke's theory designate objects rigidly, that is, in every possible world names pick out the same object. Rigid designators are names or descriptions that refer to the same thing in all possible worlds (48). Kripke argues that natural kind terms are also rigid designators because he has the intuition that if water were to be something other than H_2O, then that stuff would not be water (136,118). So, names and natural kind terms do not stand in for some description, meaning that in every possible world they refer to the same thing. To be 'true in all possible worlds' is to be necessary, making identity statements between rigid designators necessary. Thus, identity statements between rigid designators will be true in all possible worlds, if true at all, or as Kripke states, "an identity statement between names, when true at all, is necessarily true, even though one may not know it a priori" (108). Thus, one striking result of Kripke's theory of naming, important to his critique of identity theory, is that identity statements between rigid designators are necessary, if true at all.

According to Kripke's theory of naming, there are several significant differences between names and natural kind terms that are significant to his critique of identity

theory. The differences between names and natural kinds pertain to the development of natural kind terms from their initial association with an original sample. Kripke notes that "in the case of natural kinds, certain properties, believed to be at least roughly characteristic of the kind and believed to apply to the original sample, are used to place new items, outside the original sample, in the kind" (137). In the case of natural kinds, we may fix the referent by some accidental property of the kind; for instance, we might fix the referent of ‘gold’ by the property of being a yellow metal. Characterizing gold as a yellow metal will give science a kind to study. Later, science may discover that some other property (the property of having the atomic number 79) picks out the kind ‘gold’. The original sample will expand or shrink as science discovers new characteristics of the kind, meaning that it may not turn out that all members of the original sample are really members of the kind. Because these accidental properties may pick out objects outside the kind or fail to pick out all objects of the kind, we must identify kinds only by their essential properties. The differences between names and natural kinds are not many, but they are important. We may know a priori that a name refers to a particular object, but in the case of natural kind terms, a term may not refer to the exact set of things that we initially stipulate that it refers to. These differences between names and natural kinds are important to Kripke’s attack on identity theory because, on his view, they help draw an important disanalogy between concepts like water and heat and the concept of pain.

Kripke considers that an objector to his analysis of natural kinds might note that some people have the intuition that water could have been something other than H_2O. So, there appears to exist possible worlds where water is not H_2O. If these intuitions we have about how terms refer counterfactually are correct, then it is a contingent fact, rather

than a necessity as Kripke contends, that water is H_2O; that is, it didn't have to turn out that water is H_2O. If Kripke's theory of naming is correct, either our intuitions are mistaken or the identities themselves are false.

If Kripke's theory is to succeed, he must explain how our intuitions about how terms refer counterfactually can be mistaken. In the case of natural kind terms, we can explain our intuition that water could have turned out to be something other than H_2O by saying that it only appears that water can be something other than H_2O. Another possible world where the stuff that flows from lakes and streams isn't H_2O does not constitute a world where water is something other than H_2O. Instead, this is a world where the stuff that flows from lakes and streams is not water. For example, Kripke considers:

> We identified water originally by its characteristic feel, appearance and perhaps taste, (though the taste may usually be due to the impurities). If there were a substance, even actually, which had a completely different atomic structure from that of water, but resembled water in these respects, would we say that some water wasn't H_2O? I think not. We would say instead that just as there is fool's gold there could be a fool's water; a substance which, thought having the properties by which we originally identified water, would not in fact be water. (128)

We are only able to imagine water's being something other than H_2O substance because we believe we are picking out water by one of its essential properties when we are, in fact, picking it out by one of its accidental properties. When we pick out something by its essential property, we cannot be mistaken that the substance we have picked out is in fact that very object. Thus, not only does Kripke provide an explanation as to how we

can have the intuition that water could be something other than H_2O and it be impossible that water could be something other than H_2O, but as I will now explain, he has also established reasons for thinking that such an explanation does not apply to the concept of pain.

The central difference between water and pain, for Kripke, is that where we can explain away our intuition that water could have been something other than H_2O, we cannot explain away our intuition that pain could have been something other than some immediate phenomenal quality. Since our intuitions about natural kinds can be explained away, Kripke expects that such intuitions about any natural kind term, including 'pain', would need to be able to be explained away. Since "pain is C-fibers firing" appears to be an identity statement between two rigid designators, we should expect, according to Kripke's theory of naming, "pain is C-fibers firing" to be necessary, if true at all. First, Kripke argues that pain is a rigid designator:

> 'pain' is a rigid designator of the type, or phenomenon, it designates: if something is a pain it is essentially so, and it seems absurd to suppose that pain could have been some phenomenon other than the one it is. (148)

In other words, Kripke argues that pain rigidly designates by asserting that 'pain' picks out the same thing in every possible world because intuitively it seems wrong to say that pain could have been some other phenomenon, say the tactile feeling of cotton or the sound of rain. If pain were like other natural kind terms, we might have the intuition that pain could have turned out to be something other than C-fibers firing. But Kripke argues that we cannot, as in the case of water, explain away our intuition that pain could have been something other than C-fibers firing (148). He notes,

> In the appropriate sentient beings is it analogously possible that a stimulation of C-fibers should have existed without being felt as pain? If this is possible, then the stimulation of C-fibers can itself exist without pain, since for it to exist without being *felt as pain* is for it to exist without there *being any* pain. (151)

In every possible world, pain is the feeling of pain. Pain isn't picked out by one of its accidental properties like water is when we say water is the stuff that flows from lakes and streams. Kripke simply cannot imagine that pain feels differently than it does or doesn't *feel* any way at all. Therefore, according to Kripke, since it is not necessary that pain is C-fibers firing, it is false that pain is C-fibers firing because "identity is not a relation which can hold contingently between objects. Therefore, if the identity thesis were correct, the element of contingency would not lie in the relation between the mental and physical states" (154). Kripke has brought a substantive argument against identity theory; this argument requires that we have the IPQ intuition that the concept of conscious experience, including pain, can be identified only by its immediate phenomenal property. The case of pain can be generalized to all conscious mental states, meaning Kripke's attack on identity theory fails not only for the identification between pain and C-fibers firing, but also for all other mental states and their corresponding brain states.

1.3 WHY CHALMERS' ARGUMENT REQUIRES THE IPQ INTUITION

Chalmers, like Kripke before him, relies upon the intuition that concepts referring to conscious states are identified with how it feels from a first person point of view to be in those states. In contrast to Kripke's work, Chalmers seeks to falsify the much broader

thesis of physicalism, of which identity theory is one example. Physicalism is the thesis that everything, including the mind, is physical. Chalmers contends that phenomenal properties are something over and above the physical and functional processes of the brain. To show how and why the mind is something in addition to brain processes, Chalmers presents two arguments: one arguing that consciousness cannot be explained in physical terms and the other arguing that consciousness is not physical. Both arguments rely on the possibility of zombies, which in turn requires that we have the IPQ intuition that the concept of conscious experience is identified essentially by the immediate phenomenal quality of conscious states. Thus, it is of utmost importance to Chalmers' attack on physicalism that the IPQ intuition is correct.

In an attempt to show that "all microphysical facts in the world do not entail the facts about consciousness", Chalmers argues that the concept of consciousness cannot be explained in terms of the physical (1996; 93). He does this by making use of the concept of supervenience. Supervenience is a relation between properties that is often used to capture the idea that "one set of facts can fully determine another set of facts" (32). Physicalism can be stated as a supervenience relation. If facts about the physical fully determine all facts about consciousness, then consciousness can be understood entirely in physical terms, or as Chalmers notes "materialism is true if all the positive facts about the world are… supervenient on the physical facts" (41). Formally, "B-properties *supervene* on A-properties if no two possible situations are identical with respect to their A-properties while differing in their B-properties" (33). So, to say that consciousness supervenes on the physical means that there exists no two logically possible worlds identical with respect to their physical properties while differing with respect to

properties of consciousness. Consciousness does *not* supervene on the physical, according to Chalmers, because we can imagine a world where beings physically and functionally identical to us are not conscious; Chalmers calls these beings *zombies* (94). If zombies are possible, physical facts do not entail all facts about consciousness, making physicalism false. Chalmers' argument that consciousness cannot be explained entirely in physical terms requires that zombies are possible.

Zombies must also be possible for Chalmers' ontological argument against physicalism to succeed. The general worry behind this argument, as can be constructed from Chalmers' comments about supervenience and physicalism, is that creatures physically identical to us without consciousness are conceivable. Such creatures could perform all of the psychological functions we do, such as learning, exerting voluntary control and paying attention, but do not have any phenomenal experience accompanying those functions. Since Chalmers believes conceivability is an adequate guide to possibility in those cases and zombies are conceivable, zombies are possible, and physical facts do not necessarily entail all facts about the world. Thus, since there are mental facts over and above all physical facts, physicalism cannot be true. In order for zombies to be possible, not only does the concept of conscious mental states need to be identified essentially by the first-person experience of those properties, but Chalmers' notion of a zombie must overcome an objection Kripke's theory poses to the possibility of zombies.

Chalmers must overcome the serious objection Kripke's theory of naming poses to his own critique of physicalism. As we saw in the examination of Kripke's theory above, just because something is conceivable does not mean that it is possible. For

instance, even though we can conceive of water being XYZ, it is not possible that water is XYZ. Thus, we can conceive certain states of affairs being possible which are not possible. If Kripke is correct in this point, even though creatures physically identical to us without consciousness are conceivable, they may not be possible and if so, their being conceivable would pose no threat to physicalism.

Chalmers seeks to overcome the doubt that Kripke has cast upon the thesis that conceivability entails possibility by introducing a distinction between two aspects of a term's meaning. As Chalmers notes,

> many apparent "problems" that arise from these Kripkean considerations are a consequence of trying to squeeze the doubly indexed picture of reference into a single notion of meaning or necessity. Such problems can usually be dissolved by explicitly noting the two-dimensional character of reference, and by taking care to explicitly distinguish the notion of meaning or of necessity in question. (1996 64-65)

The first aspect or *dimension* of meaning picks out the object a term refers to by considering what that term would refer to if the actual world had turned out differently. Chalmers describes the primary dimension or intension of water in the following way: "The primary intension of a concept is a function from worlds to extensions reflecting the way that actual-world reference is fixed. In a given world, it picks out what the referent of the concept would be if that world turned out to be actual" (1996 57). For instance, the first dimension of water's meaning is that it picks out the clear, potable liquid that falls from the sky; this is because if it had turned out that the clear, potable liquid that falls from the sky was XYZ, then we have the intuition that water would be XYZ. Chalmers'

primary intensions enable us to select objects in the same way that synonyms identify terms, that is, by identifying objects by use of some description. In different possible worlds this synonym will pick out different objects. Just as 'water' is synonymous with 'the stuff that flows from lakes and streams' in some worlds where water was not fixed by the referent H_2O, then water will pick out the stuff that flows from lakes and streams in some worlds and not in other worlds.

The second dimension of meaning picks out the object to which a term refers by first considering what that term refers to in the actual world. Chalmers describes these secondary intensions by noting that, "if water is H_2O in the actual world, then water is H_2O in all possible worlds. In a world (Putnam's "Twin Earth") in which the dominant clear, drinkable liquid is XYZ rather than H_2O, this liquid is not water; it is merely watery stuff. All this is captured by the *secondary* intension of "water," which picks out the water in all worlds: that is, it picks out H_2O in all worlds" (1996: 59). The secondary dimension of water's meaning picks out H_2O independently of how things are in the actual world; this is because if the stuff that flows from lakes and streams is actually XYZ in some other world, we have the intuition that it would not be water, even though it would look like water. As Chalmers notes, "An expression's secondary intension (or what Jackson calls its C-intension) is just its familiar post-Kripkean intension, picking out the extension of the expression in counterfactual worlds" (2006: 10). Secondary intensions match our intuition that if the stuff that flows from lakes and streams in another world is not H_2O then that stuff is not water. Note that the primary and secondary intensions of a term's meaning will be the same just when the secondary

intension picks out the extension of a term by the way the reference of the term is fixed in the actual world, that is, by the term's primary intension.

According to Chalmers, the reason conceivability does not entail possibility in the case of water is that we can be mistaken about what water really is when only considering water a priori; that is, prior to the discover that water is H_2O, it was conceivable, but not possible that water is something other than H_2O. As Chalmers notes, "one has to be careful not to describe the world that one is conceiving (the XYZ world, say) according to primary intensions, when secondary intensions would be more appropriate" (1996: 67). For instance, if we "let P be the conjunction of physical truths about the world, and let Q be a phenomenal truth" (2002:36), then according to Chalmers, we evade this problem because "*if* P and Q both had identical primary and secondary intensions…, then premise (3) [that conceivability entails possibility] would be straightforwardly true" (2002: 37). Note that if we have the IPQ intuition that the concept of pain and other conscious mental states are identified essentially by the immediate phenomenal properties associated with it, then 'pain' has the same primary and secondary intension because 'pain' refers to the same thing in the actual world as it does in all other possible worlds. In other words, once phenomenal properties are identified with the immediate phenomenal quality of those properties (rather than, as the physicalist suggests, some physical process), it is no longer conceivable that the concepts referring to conscious states pick out anything other those properties, because in every world where consciousness exists, it is identified by the way it is subjectively experienced. For Chalmers, consciousness is a special case where it is not possible that we could be mistaken about the referents of our concepts, about our first-person experiences. The objection Kripke raises for the thesis that

conceivability entails possibility is avoided, and consciousness is a special case where what is conceivable is possible.

The common point on which Chalmers and Kripke agree is the IPQ intuition that the concept of consciousness is identified by the first-person experience of consciousness. In Kripke's argument against identity theory, the intuition supports his claim that pain could have been something other than C-fibers firing and so pain cannot be identical to C-fibers. In Chalmers' argument against physicalism, the IPQ intuition supports his claim that the first and second dimensions of the term 'consciousness' are the same and thus, allow inferences from conceivability to possibility. I have characterized both of their intuitions as being intuitions about the *concept* of consciousness, rather than simply about consciousness itself. Whether or not this is an accurate picture of their claims is largely dependent upon what a concept is. Without going further into this issue, I think that talk about pain itself can be translated into talk about the concept of pain with the use of helping phrases like 'identified by' or 'picked out by'. Any statement Kripke and Chalmers make about the essential properties of pain can be changed to statements about how the concept of pain can be identified essentially by some phenomenal property.

1.4 WHY KRIPKE AND CHALMERS CLAIM THEIR INTUITION ABOUT PAIN IS INFALLIBLE

Both Kripke and Chalmers rely on the strength of the IPQ intuition that essential to the concept of consciousness is the first-person experience of phenomenal properties. Kripke boldly declares that "If any phenomenon is picked out in exactly the same way that we pick out pain, then that phenomenon *is* pain" (153). The fact that Kripke does not

even question whether the feeling of pain is an accidental property of pain shows how intuitive Kripke takes the claim that an essential property of pain is the first-person experience of pain. Chalmers, too, almost unquestioningly accepts the intuition, even appealing to Kripke's use of the intuition. He remarks,

> As Kripke noted, there does not seem to be the same strong dissociation between appearance and reality in the case of consciousness as in the cases of water and heat: while it is not the case that anything that looks like water is water, or that anything that feels like heat is heat, it is plausibly the case that anything that feels like consciousness is consciousness. So it is not clear that the notion of 'pseudoconsciousness', something that satisfies the primary intension of 'consciousness' without being consciousness, is coherent. (2005: 7)

The IPQ intuition that consciousness is the first-person experience of consciousness is so strong that numerous physicalists have admitted to the strength of the intuition, and have sought other ways to circumvent Kripke's and Chalmers' arguments (Soames 2002; Yablo 1998). Because of the strength of the IPQ intuition, the burden of proof lies with the identity theorist and the physicalist to explain away Kripke's and Chalmers' intuition. In the next chapter, I will take on this burden of explaining why the IPQ intuition may be misleading such that it cannot be used to thwart physicalism or identity theory.

CHAPTER 2: HOW THE IPQ INTUITION MIGHT BE MISTAKEN

The success of the IPQ intuition is vital to both Kripke's and Chalmers' challenges to identity theory and physicalism respectively. If the immediate phenomenal quality of consciousness is essential to the concept consciousness, and other arguments, given by Soames and others, defending physicalism fail, then identity theory and physicalism fail. Since both Kripke's and Chalmers' arguments against identity theory and physicalism require the IPQ intuition, if the intuition is false, their arguments fail. More precisely, for Chalmers the IPQ intuition shows how the conceivability of zombies can entail the possibility of zombies because the primary and secondary intensions of consciousness are the same. The primary and secondary intensions of consciousness are the same when the IPQ intuition is true because when the concept of consciousness is essentially some immediate phenomenal quality, then the way we fix the referent of consciousness in the actual world is the way we pick out consciousness as considered in any possible world – even picking the zombie world as actual. For Kripke, the IPQ intuition helps differentiate pain and other conscious mental state terms from natural kind terms, preventing us from explaining away our intuition that consciousness could have been something other than the particular physical and functional processes of the brain, as we can, for instance, with our intuition that water could have been something other than H_2O.

Any intuition is fallible, and it is only fair to assume that Kripke and Chalmers would acknowledge this fact. At least linguistically, I can imagine offering various reasons to defend the truth of a statement such as, "She was in pain, but she just couldn't feel it" or "She felt like she was in pain but she was mistaken." My claim here is stronger

than the assertion that the IPQ intuition is fallible; I claim that there are philosophical reasons and scientific evidence to strongly suggest the intuition is false.

In order to show how Kripke's and Chalmers' intuitions about conscious experience could be fallible, I will analyze the IPQ intuition in light of several discoveries from pain science. Pain scientists have discovered two very strange cases that they call pain where patients do not experience pain in the same way normally functioning people do. Because our intuitions about these discoveries are not consistent with the IPQ intuition, I will argue that there are good reasons for not using the intuition in an attempt to thwart physicalism or identity theory. If Kripke or Chalmers try to avoid these unacceptable results by altering the IPQ intuition, then it will be unlikely that the intuition can survive the possibility of these and other conceivable cases we would intuitively call pain but with which no painful immediate phenomenal quality is associated. Lastly, I show how the parallels between pain and water reveal how we might better understand pain as a natural kind concept, rather than as a concept picked out essentially by its phenomenal quality as the IPQ intuition does. At the very least, these issues weaken the intuition so that it is difficult to place such critical importance on it; my recommendation is to not use the IPQ intuition in any attempt to falsify physicalism or identity theory since cognitive neuroscience is still an emerging discipline.

The following cases of what I call strange pain have been noted for their philosophical importance by Murat Aydede in *Pain: New Essays on Its Nature and the Methodology of Its Study* (2005); the application of these cases to Kripke's and Chalmers' intuitions about consciousness is my own contribution to these discussions. Just as Kripke and Chalmers use the case of pain to derive more general conclusions

about conscious mental states, I too take pain to be a paradigmatic case of consciousness and believe that findings particular to the concept of pain can be generalized to other concepts regarding conscious mental states. Lastly, because our concepts and our intuitions about those concepts are constantly changing, I consider violations of either our ordinary intuitions or the intuitions of the scientist to be unacceptable and good reasons for rejecting any possible interpretation of the concept of pain.

2.1 STRANGE PAIN

The concept of pain is associated with more than pain sensations. As Theodore Barber notes in "The Effects of 'Hypnosis' on Pain: A Critical Review of Experimental and Clinical Findings" (1963), "pain is a multidimensional concept"(304). Pain has both a sensory component, as well as an affective component. Barber notes that "the term 'pain' subsumes not only these various 'sensations of pain' but also a 'reaction pattern' which is generally categorized by such terms as 'anxiety' or 'concern over pain'" (1963: 304). The sensations of pain refer to the stinging, aching, burning or prickling sensations typically associated with pain. The anxiety or concern over pain is called *pain affect*. Because two different areas of the brain are responsible for these two components of pain, pain affect does not always accompany the sensation of pain, nor does pain sensation always accompany pain affect. Research on the effects of hypnosis as well as morphine has shown that we can experience pain sensation without being concerned or anxious about this sensory experience (Barber 1963). Some subjects who have been hypnotized or given large amounts of morphine do not request pain relief (Barber 1963). Theodore Barber notes that similar injuries can produce very different pain affective

reactions from patients, so there is no need to think that the experience of pain sensation without pain affect is the result of a difference in the pain stimulus. Patients experiencing pain sensation without pain affect do not show activation in the areas of their brain associated with pain affect. One patient under hypnosis yelled, “Ouch, damn it, you’re hurting me” after being pricked with a needle several times, but later asked, “When are you going to begin?” as if he had forgotten the painful stimuli (Barber 1963: 306). Additionally, some patients who insisted they were in pain did not show any signs of suffering that typically accompany pin pricks, cut and burns (Aydede 32). Let’s call the cases where patients experience pain sensation without typical pain affect *Barber Cases*.

Just as the sensation of pain can occur without pain affect, pain affect can occur without pain sensation. According to one study by Markus Ploner, a stroke survivor retained a “preserved motivational-affective dimension of pain” despite his inability to feel anything in his left hand and arm (1999; 213). Even though the patient reported that the feelings created by a cutaneous laser on his left arm were ‘clearly unpleasant’, he was unable to report the nature and precise location of the discomfort even when provided with a word list of adjectives possibly describing the pain. Ploner and colleagues take this and other findings as evidence that the subject did not experience the sensation of pain but did experience the anxiety associated with pain. In a study by Richard Gracely, patients who underwent oral surgery were given fentanyl, a narcotic analgesic drug, in addition to anesthesia (Gracely 1979, 1261). Patients were asked to gauge their pain “by choosing words from randomized lists of 12 words that described either the sensory intensity [e.g., “Very Intense”, “Moderate”, “Faint”] or the unpleasantness [e.g., “Very Intolerable”, “Distressing”, “Slightly Annoying”] associated with stimuli of varying

magnitude" (1261). Gracely found that stimuli rated by patients as "mild" before administering the fentanyl were rated as "weak" after the drug was administered, meaning that the drug had affected the intensity of the patients' sensations, but not the unpleasantness (1262). From the Richard Gracely's experiment, it can be seen that pain sensation can decrease without affecting the pain affect a patient experiences. Presumably, we can imagine a case where a patient takes a drug that completely eliminates his pain sensations but that leaves his pain affect unaffected. Let's call these cases where patients experience pain affect without the typical pain sensations *Ploner Cases*.

Even though pain sensation and pain affect occur concurrently in most people, they do not always occur together, as the strange pain cases show. The separation of pain sensations from pain affect immediately raises problems for the IPQ intuition – namely, what exactly is the conscious experience the IPQ intuition claims is essential to pain: pain sensation, pain affect, both, or either? Kripke and Chalmers must refine their claims to accommodate these findings in pain science; otherwise they are ignoring evidence that has the capability of changing or at least confusing our supposedly obvious intuitions about pain.

There are several possible ways Kripke and Chalmers might refine the IPQ intuition to accommodate strange pain cases. First, Kripke and Chalmers might suggest that only one of the two components of pain is essential to the concept of pain. For instance, they may be asserting that only pain sensation is essential to the concept of pain—that is, the sensory experiences typically caused by painful stimuli. If only pain sensation is essential to identifying the concept of pain, then not only does the IPQ

intuition ignore the fact that science currently takes Ploner cases to be genuine cases of pain, but it also may squarely conflict with many ordinary people's intuitions about Ploner cases. For instance, we might have the intuition that Ploner cases are cases of genuine pain. Imagine a case where a patient has pain affect associated with some sensation that is generally associated with pleasurable affect, say for instance, the sensation soft bed sheets has on the skin. We might think Ploner cases are cases of genuine pain because we feel strongly that the phenomenon of pain affect with typically pleasurable sensations is real pain. Of course, it may turn out that ordinary people's intuitions are that Ploner cases are not cases of pain. Consider a case similar to the one David Lewis considers where a person experiences a desire to do mathematics whenever she has pain sensations (1980: 216). In this case, our ordinary intuitions are not in conflict with the concept of pain as pain sensation only; however, this concept of pain does conflict with what pain science currently thinks about pain. In contrast, if we have the intuition that Barber cases are not genuine cases of pain, then the Barber cases are a challenge to the IPQ intuition if the IPQ intuition excludes pain affect from being an essential property of the concept of pain, a possibility Barber cases leave open.

Science currently leaves open the possibility that Barber cases are genuine cases of pain. In fact, both Barber and Ploner cases are treated as cases of genuine pain by the pain scientist. It has been noted by Martine Nida-Rumelin that as philosophers we should attempt to adhere to the following *prima facie* constraint: no seriously considered scientific theory should be regarded as false by a philosophical theory (2002: 99). The intuition that Barber pain is not pain conflicts with this constraint because it suggests a theory considered by pain science is false, that is, that Barber cases are not case of real

pain. Whether or not we have the intuition that Barber cases are pain, the pain sensation alone cannot be essential to the concept of pain if we are to adhere to Nida-Rumelin's constraint.

Likewise, we might take the IPQ intuition to assert that pain affect alone is essential to the concept of pain. Certain intuitions about the Ploner cases indicate that sometimes the concept of pain is identified with disregard for the presence of pain sensation. If we have the intuition that Ploner cases are not cases of genuine pain and the IPQ intuition claims that only pain affect is essential to the concept of pain, then the IPQ intuition conflicts with our ordinary intuitions. As noted above, we might not think Ploner cases are pain because we can imagine cases where people experience the desire to do math along with pain sensations. In this case, the IPQ intuition conflicts with ordinary intuitions that indicate pain can exist without pain affect. Additionally, even if we don't think Ploner cases are intuitively cases of pain, they still pose a challenge to the IPQ intuition. Ploner cases challenge the IPQ intuition because the IPQ intuition excludes pain sensation from being an essential property of the concept of pain, a possibility Ploner cases leave open. Since we do not wish to construct philosophical theories that conclude some seriously considered scientific theory is false, we should abandon the IPQ intuition understood as the intuition that the concept of pain is essentially identified by the property of experiencing pain affect. Likewise, if ordinary intuitions indicate that pain sensation accompanied by some seemingly bizarre desire is pain, then the IPQ intuition does not match ordinary intuitions when the IPQ intuition is about pain affect only. Ultimately, if the IPQ intuition is taken to be about either pain sensation or pain affect only, then the intuition fails to satisfy our intuitions about Barber

and Ploner cases and cannot leave open the options that both Barber and Ploner cases are cases of genuine pain and conflicts with scientific practice.

Instead, Kripke and Chalmers might contend that the IPQ intuition holds that experiencing both pain sensation and pain affect simultaneously is essential to the concept of pain. Clearly, this understanding of Kripke and Chalmers intuition will not work if we have the intuition that cases of strange pain qualify as pain because neither Barber cases nor Ploner cases include both pain sensation *and* pain affect. Even if one does not have strong intuitions about the Barber and Ploner cases, there may be other reasons for believing that these borderline cases should count as pain. As mentioned above, neuroscientists study these cases as cases of pain, meaning intuitions driven by Kripke's or Chalmers' philosophical theories could result in the conclusion that currently accepted attitudes in pain science are wrong, a consequence we as philosophers should try to avoid (Nida-Rümelin 2002). Thus, we should regard the strange pain cases as genuine cases of pain.

In contrast, including such ambiguous cases of pain in our conception of pain may seem frivolous or desperate. Normally functioning humans experience pain affect and pain sensation together; what reason do we have for including such strange cases in our concept of pain? Simply because Barber and Ploner cases are aberrant cases does not mean they are no less cases of pain or that they have no capacity to shape our concept of pain. Pain researchers can effect our ordinary intuitions about pain. So, even though our ordinary intuitions may not align with the strange pain cases, the current attitudes of experts studying pain may broaden (or narrow) our concept of pain. There is a rich history of scientific discoveries that are highly counterintuitive and that shape our later

views about what is intuitive or even possible. The discoveries that the Earth moves around the Sun, that whales are mammals, and that the space-time continuum is curved were highly counterintuitive theses that turned out to be true. Because science shapes what we think about the world, it is not difficult to imagine how we might understand the concept of pain as including the strange pain cases. The IPQ intuition cannot be understood as the intuition that the concept of pain is essentially identified by having both pain sensation and pain affect. It is unlikely that pain sensation *and* pain affect are essential to the concept of pain because our ordinary intuitions may conflict with such understanding and science does not currently endorse such a view of pain.

Finally, the IPQ intuition might be understood as an intuition about the disjunctive property of being either pain sensation or pain affect or both. In this case, the concept of pain is identified essentially by whether or not pain sensation or pain affect or both are present. By this interpretation of the IPQ intuition, prototypical pain, Barber pain and Ploner pain are all real cases of pain. Not only does the IPQ intuition under this interpretation match our intuitions about strange pain cases, but it also aligns with what science currently assumes with regard to strange pain, that is, that strange pain cases are genuine cases of pain.

It is difficult to know whether Kripke and Chalmers take the "immediate phenomenal quality" of pain to be pain sensation only or whether they believe it could include pain affect as well. Kripke uses the term "pain" in a way that indicates that by immediate phenomenal quality, he means pain sensation. For instance, in wondering whether being a sensation is a contingent feature of pain, Kripke asks, "Consider a particular pain, or other sensation, that you once had. Do you find it at all plausible that

that very sensation could have existed without being a sensation…" (146). Elsewhere he uses the phrase "...felt as pain..." (151, 153) and compares pain to other sensations when he notes that God must do extra work so that we can, "...feel the C-fiber stimulation as *pain*, and not as a tickle, or as warmth..."(154). But as shown above, the understanding of the IPQ intuition conflicts with both our ordinary intuitions about pain and interferes with the work pain science is attempting to do. Nonetheless, since the most charitable interpretation of the IPQ intuition is this last disjunctive understanding of the intuition, let's suppose that Kripke's and Chalmers' intuition is that pain is essentially identified by being either pain sensation or pain affect or both. So, while we might have thought that our intuitions about pain were clear-cut, it turns out that we seem to have various intuitions about a multidimensional concept. It seems plausible that we might also be having intuitions about some additional dimension of pain that we have not yet considered.

2.2 HOW THE IPQ INTUITION IS NOT AS OBVIOUS AS KRIPKE AND CHALMERS CLAIM

Because we have had to refine the IPQ intuition in light of these discoveries from pain science, there is reason to think that the IPQ intuition is not as obvious as Kripke and Chalmers require. I will argue first that we have reason for asserting the existence of cases of pain that have no immediate phenomenal quality, making the IPQ intuition far less obvious; second, I will note that the disjunctive nature of the essential property of pain as required by the refined version of the IPQ intuition is suspect. By constructing their arguments to rely upon the IPQ intuition, Kripke and Chalmers shift the burden of

proof to the identity theorist and physicalist to show how pain can be conceivably identified with some physical or functional process of the brain. Thus, if the IPQ intuition is less obvious than Kripke and Chalmers have claimed that it is, then it is less clear that the burden of proof lies with the physicalist to show the conceivability of identification between the concept of pain and the physical and functional processes of the brain, rather than with Kripke or Chalmers to show the conceivability of the identification between the concept of pain and some immediate phenomenal quality.

First, it seems highly likely that further developments in pain science could alter our intuitions about pain in such a way that would cause the IPQ intuition to fail. Consider the possibility that pain affect is picked out in two different ways, much in the same way we can pick out pain by either pain affect or pain sensation or both. Suppose that pain affect is picked out by both emotions such as worry, concern and a desire to remove the presence of a stimulus *and* behavioral aversion to that stimulus. Our pain affective emotions often manifest themselves through behavior, but are something different than the behaviors themselves. Think of the desire you might have for someone to stop running their fingernails down a chalk board. Our emotional response epitomized by our desire to stop the fingernails from running down the chalk board is separate from the aversion behaviors that we may display (e.g. cupping our hands over our ears). Our behavioral aversion to stimuli tagged as painful by normally functioning people would be actions like moving away from the painful stimulus, refusing to look at the stimulus or taking actions that would end the effects of the stimulus on us.

If the concept of pain can be accurately analyzed in this way, then pain is picked out by one of three components: pain sensations, pain affective behaviors and pain

affective emotions. It seems *clear* from the scientific literature that experiences with the following components are *cases of pain*:

1. pain sensations, pain affective emotions, and pain affective behaviors (e.g., prototypical pain)
2. pain sensations and pain affective behaviors without related emotions (e.g., what an athlete or solider feels as they continue to play or fight despite pain sensation)
3. pain sensations without related emotions or behaviors (e.g., Barber Cases)
4. pain sensations and pain affective emotions without related behaviors (e.g., someone who suppresses their urge to react to some pain sensations and affect)
5. pain affective behaviors and pain affective emotions without pain sensation (e.g., Ploner Cases)

Case 1 clearly exemplifies the case of prototypical pain. As noted above, cases 3 and 5 seem to be cases of pain according to our intuitions; at least we have good reasons for considering them as genuine cases of pain. Cases 2 and 4 are cases of pain by Kripke's and Chalmers' intuition that pain is essentially identified by the first person phenomenal experience of pain.

The philosophically interesting cases arise when we imagine cases where patients have pain behaviors only. For instance, a patient who does not feel any sensation when touched with a cutaneous laser or does not desire the laser to stop touching him or report that the laser bothers him, but moves immediately away from the laser. If the case of pain affective behaviors alone turns out to be pain according to our intuition or science, then it is not essential that the concept of pain be identified solely by some phenomenal quality. Additionally, there may be reason for thinking pain affective behaviors alone can constitute pain. For instance, knowing full well that neuroscience is still an emerging discipline, we do not, as philosophers, want the layperson's intuitions to prevent the scientist from exploring possible similarities between clear cases of pain and borderline cases of pain — cases that might in fact lead us to the essential property of pain. Any

intuition that would limit comparisons between the different possible varieties of pain should be avoided. It may not seem that keeping the folk intuitions at bay is an important task, but as evidenced by the following comment from cognitive scientist Leda Cosmides, this task is important to building a rigorous discipline because "intuition systematically blinds us to the full universe of problems our minds spontaneously solve, restricting our attention instead to a minute class of unrepresentative 'high-level' problems" (1994; 41). Chalmers too recognizes the impact of philosophical intuitions about consciousness on empirical science, noting that, "Any empirical study of consciousness requires some pre-experimental reasoning to even get off the ground, in order to draw conclusions about conscious experience on the basis of physical data" (1996; 233). One reason to be wary of relying heavily on our intuitions in making philosophical claims about the mind is that those intuitions may 'blind' the scientist to reasoning that might aid them in making new discoveries. Thus, any intuition other than the intuition that would cause us to conclude that the borderline cases are not pain would unduly confine the scientist in her theorizing and experimentation construction. For instance, we can imagine science studying these additional cases of strange pain *as pain*, even though we do not have the intuition that they are pain.

So, we can imagine cases where we have the intuition that patients are in pain, but do not experience any of the immediate phenomenal qualities typically associated with pain. Not only can we imagine such cases, but we may want to call these cases of *pain* to prevent the scientist from being confined by ordinary intuitions. Thus, because it is possible that someone be in pain without experiencing the immediate phenomenal quality of pain, the IPQ intuition fails.

The refined version of the IPQ intuition that Kripke and Chalmers are committed to takes the essential property of the concept of pain to be disjunctive. It seems at least odd that an essential property of some concept would not be a singular, unique property. Having a disjunctive property as an essential property may violate Ockham's razor if there is some other simpler underlying quality that could account for both disjuncts of the disjunctive property. Thus, if there does exist any underlying property that accounts for our intuitions, both scientific and ordinary, about pain, then we have little reason to conclude that such disjunctive property is an essential property of pain. What was once inconceivable for Kripke and Chalmers, namely that pain exist without its immediate phenomenal quality, is looking increasingly possible and, as I examine in the next section, it may even be actual.

2.3 PAIN AND WATER MORE ALIKE THAN PREVIOUSLY THOUGHT

In the last section, I showed how strange pain cases can help us conceive of intuitive cases where the concept of pain can be identified by something other than the immediate phenomenal quality of pain. I will now strengthen the possibility that there are actual cases where pain exists without pain sensation or pain affect by drawing an analogy between real historical cases in science where what seems inconceivable turns out to be actual. These real cases in science have affected our ordinary intuitions; I will argue that a similar phenomenon may occur with our ordinary intuitions about pain. I examine how water was initially characterized prior to the discovery that water is H_2O and show how our current characterization of pain could parallel the initial characterization of water. The parallels between the history of pain and water give us

reason to think that even though it may seem inconceivable that the concept of pain can be picked out essentially by something other than its immediate phenomenal quality, pain could turn out to be identified in this way. The comparison between the history of water and the history of pain reveals a way for an essential property of pain to be something other than pain's immediate phenomenal quality and still capture our intuitions about pain.

One interesting fact in the history of the discovery that water is H_2O was that for a very long time it was thought that ice and liquid water were two different substances. It was not known that ice, water and water vapor were simply different forms of the same substance; as Needham reports,

> Phenomena such as vaporization of water and condensation (of air into water) were understood as transmutations [conversion of one substance into another]. But Lavoisier's analysis consisted in boiling water and reducing the steam over heated charcoal, separating the oxygen by forming carbon dioxide and leaving hydrogen. He subscribed to the age-old idea that separation is the acid test of difference of substance, but assumed that by separating the steam into components he was separating water. Water is not essentially liquid, on this view; rather, the same substance can take on the form of a gas without any transmutation.(2002:208)

Rather than changing from one substance to another, water changes forms when it freezes, evaporates or melts. It is important to note how intuitive it must have seemed that water and ice were two separate substances, as even Aristotle believed that "the mutual transformations of the elements cannot take place by means of excretion. The

remaining alternative is that they should be generated by changing into one another" (*On the Heavens*, 305b 27-9; quoted by Needham 208). One reason it might have been so difficult for Aristotle to conclude that water and ice were the same substance is that he had no concept of a rate of change, which is necessary to understanding how two substances could be the same and display different properties. The idea of a rate of change would not be formally introduced until the 1700s by Leibniz and Newton (Janiak 2006).

Likewise, we too may be missing a critical mathematical or scientific concept that would allow us to see pain could be instantiated by the very same property emerging in different areas of the brain. Even though it is intuitive that the concept of pain is identified by some immediate phenomenal quality, there still exists a significant possibility that the concept is not identified essentially in that way. So, although it may currently seem inconceivable that pain is not essentially identified by some immediate phenomenal quality, it may still be possible that pain is not identified by some immediate phenomenal quality.

Conceiving of liquid water and ice as the same substance prior to the discovery that water was H_2O is not the only example in the history of science where what is inconceivable turns out to be actual. The advent of non-Euclidean geometries and their subsequent application to physics is another example of how what is actual appears at first to be inconceivable (Torretti 2004). Thinking that mathematics was the source of our a priori reasoning about the world and that the world clearly behaved in accordance with the laws of Euclidean geometry, Kant would lead us to believe that non-Euclidean geometries could not possibly be mathematical concepts which space and time obey (B

xii). And yet Einstein's theory of General Relativity makes full use of non-Euclidean geometry. What was clearly inconceivable for Kant, namely that the world obeys laws that make use of non-Euclidean geometries, was in fact actual. By analogy, what may be inconceivable for Kripke and Chalmers, namely that the concept of pain is identified essentially by something other than pain's immediate phenomenal quality, may in fact be true. For instance, we can imagine some underlying functional process that is common to all types of pain: prototypical pain, Barber and Ploner cases. Not only are there intuitive cases where the concept of pain can be identified by something other than the immediate phenomenal quality of pain, but we have a way of imaging how those cases might have seemed inconceivable prior to their acceptance within the scientific community.

2.4 HOW PAIN MIGHT BE A NATURAL KIND

There is a sense in which the IPQ intuition relies heavily upon the absence of a scientific account of mental phenomena. If there were a complete scientific account of mental phenomena, there is no guarantee that the IPQ intuition would still be intuitive. Showing exactly how a scientific account of consciousness might go reveals how the IPQ intuition might fail. Thus, a scientific account of pain as a natural kind is significant to weakening the IPQ intuition. In this last section, I look at what property might identify the concept of pain essentially. The concept of pain may be associated with some qualia, but the concept of pain might better be analyzed scientifically by some other feature of pain.

A common component of pain sensation and pain affect may be some underlying functional process. Research on pain and attention reveals that the experience of pain is

decreased when paying attention to something else because the brain switches activity to the attention centers of the brain (Bantick 2002). In the most recent studies on pain and attention, Ohara has associated pain with oscillations and synchrony of the medial frontal, parasylvian and primary somatosensory cortices of the brain (Ohara et al., 2006). Directing attention away from the subject's pain, inhibits the sychronization of these three areas. In a recent editorial on Ohara and colleagues' findings on pain, A.V. Apkarian notes that, "pain perception may correspond to the emergence of slow large-scale synchrony in a few cortical structures. Distraction from pain could mean destroying or preventing the formation of such coherent structures, and both suggestions have obvious implications for understanding and controlling pain" (Apkarian 2006: 221). Performing Ohara's experiment on subjects who have been given morphine, are under hypnosis or have had a particular type of stroke may reveal that pain sensation and pain affect are both the result of synchrony. Synchrony between the pain centers of the brain could explain Barber and Ploner cases if synchrony can be instantiated by different areas in the pain centers. So, patients experiencing pain sensations only may have synchrony only occurring only in the pain sensation areas of the brain where normally functioning humans might have other pain areas associated with pain affect synchronizing. Because a single, unique property, namely synchrony between the pain centers of the brain, can pick out prototypical pain and Barber and Ploner cases, we have little reason to keep the intuition that an essential property of the concept of pain is some immediate phenomenal quality. Despite some people's intuition that someone with pain synchrony but without any of the other properties typically associated pain is not in pain, we should say such bizarre phenomenon is pain because there is some other simpler underlying quality that

could account for all of the possible cases of pain with a single underlying property. Now, we can see that the disjunctive property of having either pain sensation, pain affect or both is not a problematic property for pain to have only if that property is recognized as an accidental property of pain, not an essential one.

CONCLUDING REMARKS

One difficult issue that arises in considering these cases of strange pain is the possibility that we might truncate the concept of pain so that the identity is between some singular, entirely phenomenal quality and some brain process. This would cause a problem for the analysis of the concept of pain I have provided because it acknowledges that pain is a multidimensional concept, but avoids the consequence that there could be some pain-related phenomenon with no phenomenal quality. I am skeptical as to whether we can talk about such a singular, entirely phenomenal concept. It is difficult to imagine how we would ever know that such a phenomenon existed without there being some external manifestation of the phenomenon. The possibility that we might refine the concept of pain in this way is one area for further thought and consideration.

The IPQ intuition must succeed if Kripke's and Chalmers' challenges to identity theory and physicalism are to succeed. The IPQ intuition initially conflicts with our intuitions about strange pain cases and does not align with the current scientific understanding of pain. Additionally, the IPQ intuition is not as obvious as Kripke and Chalmers thought when we consider that pain behaviors may be also essential to the concept of pain. Lastly, pain and water may be more alike than previously thought, revealing that we might come to understand pain as a natural kind, rather than a

phenomenal quality as the IPQ intuition does. While we may think of the different processes occurring in the affective and sensory pathways of the brain as distinct processes responsible for different feelings, they could instantiate pain in such a way that both processes count as pain and yet neither is necessary to pain because synchrony between the various pain centers of the brain is what is essential to the concept of pain. These issues make the IPQ intuition less intuitive, making it difficult to place so much importance on it. Ultimately, these issues weaken the IPQ intuition, making it difficult for any critique of identity theory or physicalism to rely heavily upon it. I recommend not using the IPQ intuition in an attempt to thwart physicalism or identity theory.

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