

# Are our concepts **Conscious State** and **Conscious Creature** Vague?

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**Abstract.** Intuitively it has seemed to many that our concepts **conscious state** and **conscious creature** are sharp rather than vague, that they can have no borderline cases. On the other hand, many who take conscious states to be identical to, or realized by, complex physical states are committed to the vagueness of those concepts. In the paper I argue that **conscious state** and **conscious creature** are sharp by presenting four necessary conditions for conceiving borderline cases in general, and showing that some of those conditions cannot be met with **conscious state**. I conclude that **conscious state** is sharp, and the conclusion is then extended to **conscious creature**. The paper ends with a brief discussion of some implications.

## 1. Introduction

Vagueness is ubiquitous. Although few would concur with Russell (1923) that it infects all linguistic expressions and concepts, it is uncontroversial that it is extremely widespread. One concept many have judged not to be vague, however, is **consciousness**.<sup>1</sup> It is often suggested that concepts like **conscious creature** (**conscious system**, etc.) are not vague, that they have no borderline cases. Take, for example, McGinn:

...the concept of consciousness does not permit us to conceive of genuinely borderline cases of sentience, cases in which it is inherently indeterminate whether a creature is conscious: either a creature definitely is conscious or it is definitely not. (1996, p. 14)

or Searle:

Consciousness is an on/off switch: a system is either conscious or not. But once conscious, the system is a rheostat: there are different degrees of consciousness. (1992, p. 3)<sup>2</sup>

Similar views are held regarding **conscious state** (**conscious event**, etc.): many think that mental states are either clearly conscious or clearly not conscious. Indeed, one reason for thinking there can be no borderline conscious creatures is that it is hard to imagine what it could be for a (mental) state to be borderline conscious. In any event, the two views typically go hand in hand, since arguably a creature is conscious if and only if it can enjoy conscious states.<sup>3</sup>

In what follows I take the possibility of borderline cases to be necessary and sufficient for vagueness. Concepts with no possible borderline cases I call 'sharp'. This is not intended as a definition of 'vagueness', but merely as a description of how 'borderline case' will be used in what follows. I thus assume, in contrast with several philosophers, that borderline cases are necessarily associated with borderline regions with blurred or fuzzy boundaries.<sup>4</sup> I also intend my uses of 'vague' and 'borderline case' to be neutral with respect to competing theories of vagueness (e.g., the epistemic view), and controversial issues concerning vagueness (e.g., whether there is higher-

order vagueness). For our purposes, the lack of a definition of ‘borderline case’ will be of no consequence; an intuitive understanding of the term as applied to vague concepts will suffice.<sup>5</sup>

Not all theorists agree that there can be no borderline conscious states or creatures. In fact most think there can be, and are. Thus we have Dennett:

The very idea of there being a dividing line between those creatures “it is like something to be” and those that are mere “automata” begins to look like an artifact of our traditional presumptions...Consciousness...is not an all-or-nothing, on-or-off phenomenon. (Dennett 1998, p. 349)<sup>6</sup>

In fact, most philosophers working on consciousness think borderline conscious states and creatures *must* be possible. That is because most philosophers working on consciousness reduce consciousness to complex physical (e.g., neurophysiological) or functional properties, and concepts for such properties are vague. As Papineau puts the point,

...any physicalist account of consciousness is likely to make consciousness depend...on the possession of some kind of structural complexity....Yet any kind of such complexity is likely to come in degrees....So we should expect there to be borderline cases—such as the states of certain insects, say, or fishes, or cybernetic devices—where our physicalist account simply leaves it indeterminate whether these are conscious states or not. (1993, p. 124)

But there is a problem with taking **conscious state** and **conscious creature** to be vague because of one’s metaphysical commitments regarding consciousness. To see that, consider the distinction between a community’s *current* concept **F**, which may misrepresent Fs in various ways, be incomplete to various degrees, etc., and more *correct versions* of **F** which the community might possess in the future, versions which more accurately reflect the nature of Fs. And now consider the concept **life**. Assuming that life is as modern biology describes, the correct concept **life** is vague (viruses, e.g., are plausible borderline cases). However, the concept at earlier points in its historical development was sharp—and that, in spite of the fact that such earlier versions of the concept referred to *the very same biological phenomenon* as our modern concept. Moreover, should we come to discover that life differs from what biologists now believe, and that it requires a sharp concept to faithfully represent it, it will not follow that our current concept **life** is sharp, only that a sharp concept is needed. This shows that the vagueness/sharpness of a concept **F** can vary independently of the nature of Fs. What makes a concept **F** vague/sharp at points in its historical development, therefore, what explains its vagueness/sharpness at such points, must be something other than Fs’ nature.

That said, reflections about Fs *can* lead to conclusions about the vagueness/sharpness of **F**, if we have reason to believe we possess a final, correct theory of Fs. For such a theory has implications about whether or not the correct concept **F** is vague (just as the correctness of molecular biology implies that the correct concept **life** is vague) even though it does not explain such vagueness.<sup>7</sup> However, to the degree that it is uncertain whether we have attained the correct theory of Fs, inferences about the vagueness/sharpness of the correct concept **F** based on views about Fs’ nature will be equally uncertain. A fortiori, inferences about our *current* concept **F** will be uncertain due to the added uncertainty of how similar our current concept is to its final, correct form. But that this is precisely our situation with consciousness: there is a great deal of uncertainty about the nature of consciousness and the relation between our current concept and that of a completed psychology.

Consequently, no weight can be attached at present to inferences about the sharpness/vagueness of our *current* concepts **conscious state** and **conscious creature** from metaphysical considerations about consciousness.<sup>8</sup>

If it is not the nature of Fs that accounts for **F**'s vagueness or sharpness, what does? A natural thought is to look to internal, psychological features of how Fs are conceived or represented among community members competent with the concept.<sup>9</sup> After all, competence with a vague concept **F** entails a sensitivity to the location and character of **F**'s borderline regions, and such a sensitivity is typically expressed by manifesting categorizing dispositions in and around **F**'s borderline regions such as: increased hesitation about whether to judge individuals as F or not-F, denying both that an individual is F and that it is not-F, changing one's mind as to whether it is F or not-F, judging it to be neither clearly F nor clearly not-F (i.e., a borderline case), and so on. Call these *v-dispositions*. In addition, for those competent with a vague concept there is a characteristic phenomenology associated with conscious reflection on cases in and around the borderline region—a phenomenology distinct from that associated with certain kinds of ignorance about sharp boundaries, for example.<sup>10</sup> Now, clearly, a major part of the story of what accounts for such *v-dispositions* and phenomenology will include psychological details (still largely unknown) concerning concepts<sup>PSY</sup> and conceptions of F.<sup>11</sup> The answer to the question “What makes **F** vague?” will lie largely in those details.<sup>12</sup>

We have seen that it is illegitimate to appeal to the metaphysics of consciousness to determine whether our current concepts **conscious state** and **conscious creature** are sharp/vague. How, then, ought we to proceed? A simpler, more common way is to appeal to intuitions; and here the intuition of sharpness seems strongest. Indeed, even materialists whose theories commit them to the vagueness of the (correct) concepts **conscious state** and **conscious creature** acknowledge the intuition. Again we have Papineau (concerning **conscious state**):

If the line between conscious and non-conscious states is not sharp, shouldn't we expect to find borderline cases in our own experience? Yet when we look into ourselves we seem to find a clear line. Pains, tickles, visual experiences and so on are conscious, while the processes which allow us to attach names to faces, or to resolve random dot stereograms are not. True, there are “half-conscious” experiences, such as the first moments of waking, or driving a familiar route without thinking about it. But, on reflection, even these special experiences seem to qualify unequivocally as conscious, in the sense that they are like something, rather than nothing. (1993, p. 125)<sup>13</sup>

But the trouble with intuitions, even forceful ones, is that it is all too easy to deny having them, or to deny their trustworthiness. Intuitions are thus best supplemented by arguments. Accordingly, if we wish to reach well-grounded conclusions about whether our current concepts **conscious state** and **conscious creature** are sharp or vague, an argument would be useful.

The above discussion suggests how an argument might be developed. If we had a psychological theory of the competence associated with vague concepts, as well as an account of our concepts **conscious state** and **conscious creature**, it could be determined whether those concepts have what is required for vagueness. Such theories, however, are lacking. Fortunately, the same result can be attained for less. An account that specifies some psychologically *necessary* conditions for competence with a vague (or sharp) concept, along with reasons for thinking those conditions are not met with **conscious state** and **conscious creature**, would also suffice to show that those concepts are sharp (or vague). In this paper, I attempt to provide an argument of

that sort for the conclusion that our current concepts **conscious state** and **conscious creature** are sharp. The bulk of the argument will concern **conscious state**, and only toward the end will the conclusion be extended to **conscious creature**.

Let me emphasize here that the concept **conscious state** under discussion is the *general* state of being conscious (what Papineau (2002) calls ‘consciousness-as-such’), and not more determinate conscious states like pain, the experience of seeing red, etc. That is because many concepts for determinate conscious states are intuitively vague. For example, phenomenally complex states like a pain or an itch ‘build up’ at the start and ‘taper off’ at the end. Near those temporal boundaries there are numerous short-lived phenomenal states that intuitively are borderline pains or itches. Or again, a visual experience of a shade of color in the borderline region between red and orange is arguably a borderline experience of red. Concepts for such determinate conscious states will thus not be at issue in what follows.

My motivations for arguing that our current concepts **conscious state** and **conscious creature** are sharp are threefold. First, the conclusion, if correct, strongly suggests that most familiar metaphysical theories of consciousness (common versions of the identity theory, functionalism, and dualism) are false. Elsewhere (Antony 2006a) I have argued for that claim and discussed ways of responding to it, and I shall rehearse very briefly the main points below. Second, the argument, if on the right track, has independent interest for the project of developing a psychological theory of vague concepts. In addition, given that most of our concepts are vague, the discussion has relevance for psychological theories of concepts<sup>PSY</sup> and conceptions generally. Finally, the argument accords with a methodology I favor according to which studying our conception of consciousness can lead to progress on consciousness itself (see Antony 1999).

## 2. Concepts, Conceptions, and **Consciousness**

### 2.1 *Concepts and Conceptions*

In arguing that the concept **conscious state** is not vague, I appeal to what I call our *conception* [conscious state].<sup>14</sup> A few words about conceptions are thus in order. I shall also characterize some aspects of our concept **consciousness** to help clarify how **conscious state** and **conscious creature** are to be understood.

By stipulation ‘conception’ will refer to mental representational structures that are semantically and syntactically *complex*—structures by means of which we identify, categorize, and often simply think about objects, events, properties, etc. When one identifies or categorizes an instance as a case of baldness, arguably, one employs a complex representation [bald] which contains elements such as [person], [head], [scalp], [skin], [hair], [quantity], etc.<sup>15</sup> It is partly by determining whether and how such elements are satisfied that we judge whether the instance is one of baldness. Similarly, when thinking thoughts involving the concept **bald**, a complex representation comprising similar elements is often, if not always, tokened. Conceptions are also implicated when we try to apply a vague concept **F** to cases in the vicinity of **F**’s borderline region(s), and manifest v-dispositions. The v-dispositions are activated as a result of the attempt to apply our conception [F] to the cases.<sup>16</sup> To illustrate, in deeming a person to be borderline bald, in hesitating whether to judge him bald or not, etc., we will have first applied (consciously or unconsciously) representations such as [hair], [head], [scalp], [quantity]—elements from our conception [bald]—and the hesitation, etc. will be an *effect* of such

psychological processes. It follows that we can speak of conceptions *associated with* concepts: in categorization and (often) thought involving a concept **F**, and in attempting to apply a vague concept **F** to borderline cases, we employ an associated conception [F].

The same holds for **consciousness**: when categorizing states as conscious or thinking about consciousness, we also employ an associated conception [consciousness]. And if **consciousness** is vague, an associated conception [consciousness] will be involved in activating v-dispositions in response to cases near the concept's borderline region (and *mutatis mutandis* for **conscious state** and **conscious creature**). Our conception [consciousness] reflects the rich way in which we think about consciousness. Its elements represent a temporally extended phenomenology with qualitative distinctions over time and at particular times, to which we seem to have some kind of direct access, with "parts" that are "unified" or "bound," and so on. Whether all of those details are correct is unimportant; the point is just that there is clearly some complex conception through which we commonly think of consciousness. What the conception's nature is an empirical matter, as with other representational structures routinely studied in psychology.

For our purposes it will be unimportant to say how precisely conceptions are individuated—for example, which and how many representational elements are parts of conceptions. Also, that conceptions can differ across thinkers, or a given thinker at different times, need not prevent us from speaking of *shared* conceptions, for instance our conceptions [baldness] or [consciousness]. As is common practice in psychology, where a term is used univocally ('bald', 'consciousness'), it can be assumed (defeasibly) that individual differences in the associated conceptions of competent users of the term can be abstracted away from, and commonalities studied. If we assume that 'conscious state' and 'conscious creature' are univocal in the consciousness literature—as I shall (those who disagree can take 'consciousness' to mean *phenomenal consciousness* throughout)—we can thus speak of *our* conceptions [conscious state] and [conscious creature].<sup>17</sup>

What is the relation between concepts<sup>PSY</sup> and their associated conceptions? Although many believe the complex representations I have been discussing *are* our concepts<sup>PSY</sup>, or are at least implicated in their individuation,<sup>18</sup> Fodor (1998), for example, maintains that (lexical) concepts<sup>PSY</sup> are unstructured, atomic representations. I, however, wish to remain neutral on such matters. It will be enough for our purposes that when concepts<sup>PSY</sup> are employed in our judgments about vagueness, so are their associated conceptions. That follows trivially if concepts<sup>PSY</sup> are identical to conceptions; if they are not, it amounts to a kind of psychological regularity. Although it is controversial whether concepts<sup>PSY</sup> have the sort of complexity I ascribe to conceptions, it is relatively uncontroversial that conceptions play central roles in our mental lives.<sup>19</sup>

Some representational elements of our conceptions are *unconscious* or *implicit* in that we have no introspective access to them. That is true of most of our conceptions, so there is every reason to believe it holds of [consciousness] too.<sup>20</sup> The elements of [consciousness] on which my arguments are based, accordingly, are only those to which we have conscious access. It will thus remain open that there are unconscious elements that entail that **consciousness** is vague. In the absence of evidence for such elements, however, it is rational to suppose that they do not exist.

## 2.2 More on *Consciousness*

With the aim of further characterizing our concept **consciousness**, I wish to discuss three ways in which the concept can be construed as *neutral*. Consider Descartes' dreaming and evil-genius thought experiments in which one doubts the existence of the external world, but finds that something remains—what Descartes called 'thought' and we can call 'consciousness'.<sup>21</sup> These thought experiments get us thinking about consciousness with the concept I have in mind. I do not claim that all of the thought experiments' assumptions are correct or even coherent; only that performing the experiments causes us to token the conception [consciousness] and conceptualize consciousness "though" it. Once tokened, we can introspect the conception and gain whatever sort of (limited) knowledge of it and **consciousness** such an activity can provide.

Notice that the dreaming and evil-genius thought experiments appear in the *Meditations before* Descartes investigates whether dualism, materialism, or idealism are true. Prima facie, therefore, the concept is *neutral* between, and *pretheoretical* with respect to, those theories.<sup>22</sup> That should strike no one as odd: anyone who has pondered the traditional mind-body problem is familiar with conceiving consciousness in such a way that materialism, dualism, and idealism are all entertainable (albeit not with equal ease). A second way in which **consciousness** is neutral concerns the question whether consciousness exhausts the realm of the *mental*. For Descartes there were no non-conscious mental phenomena. But there seems little difficulty in conceiving of consciousness using the very concept under discussion while entertaining the possibility of a realm of unconscious mental states.

For a third way in which **consciousness** is neutral, consider whether to be in a conscious state C, a subject must be reflecting on, attending to, aware of, etc., C's contents. While there is admittedly more than one question here, many would nevertheless answer in one of two ways. One might insist with Descartes that attention to, awareness of, etc. C's contents is essential, for if they are lacking what could it mean to say C's contents are *in consciousness*?<sup>23</sup> Alternatively, one might speculate that contents *can* be in consciousness even when the subject lacks awareness of or access to those contents, pointing to considerations like: our experiences often seem richer than the isolated contents to which we are attending; animals have phenomenal experiences while lacking the capacity to introspect or reflect; Jamesian "fringe" phenomena; etc. On this view, there can be conscious contents of which the subject is in some sense unaware, or not fully aware. Call this *consciousness without awareness* (or consciousness<sup>-a</sup>), which can be contrasted with consciousness with awareness (consciousness<sup>+a</sup>).<sup>24</sup>

I believe that **consciousness** can be viewed as neutral on the question of whether consciousness<sup>-a</sup> exists. To do so, consciousness<sup>-a</sup> must be seen as intimately linked to consciousness (it is, after all, a type of *consciousness*): it must be imagined as involving genuine phenomenal properties, there must be a "hard problem" for consciousness<sup>-a</sup> no less than for consciousness<sup>+a</sup>, etc. Otherwise it is unclear how consciousness<sup>-a</sup> would differ from the unconscious. Viewing consciousness<sup>-a</sup> in that way may seem impossible, however, since it requires imagining phenomenal contents of which (in some sense) no one is aware! But just as I can imagine phenomenal contents of *your* experience to which I have no access, but treat as no less challenging to the mind-body problem than my own, so can I try to imagine phenomenal contents of *my* experience to which I have no access but which challenge the mind-body-problem as much as those I introspect. *Phenomenology* thus becomes a common factor in consciousness<sup>+a</sup> and consciousness<sup>-a</sup>. And awareness, attention, reflection, etc. are factored out, leaving a thinner, more neutral concept **consciousness** whose

central feature is phenomenology. The boundary between consciousness so conceived and its absence—the boundary I shall argue is sharp—is thus the boundary between phenomenology and its absence. If consciousness<sup>-a</sup> exists, it is the boundary between consciousness<sup>-a</sup> and the unconscious, rather than that between consciousness<sup>+a</sup> and consciousness<sup>-a</sup>. (I shall have nothing to say about the latter boundary in this paper.)

### 3. Possessing Vague Concepts

In applying a vague concept **F** to cases in the vicinity of its borderline region, we said, we employ the conception associated with that concept, [F]. Let us look a bit more closely at how this works, by examining what is required psychologically for conceiving borderline cases, for manifesting *v*-dispositions. I will not provide anything like a complete theory of conceiving borderline cases, just what is needed for the arguments that follow. I shall first discuss what is involved in conceiving clear Fs, then clear not-Fs, and finally borderline Fs.

#### 3.1 *Conceiving Clear Fs*

How do we conceive clear cases of F? The basic story has three parts. First, our *conception* [F] must be involved. That consists of elements that represent parts, properties, relations, etc. involved in realizations of F. The conception [bald], for example, includes elements that represent parts, properties, etc. like [head], [scalp], [hair], [quantity], [scalps are on heads], and so on. The conception [F] also specifies how such parts, properties, etc. can vary in a manner consistent with F-hood (e.g., how much hair is consistent with baldness). Where **F** is a cluster concept, the conception specifies which combinations of (weighted) parts, properties, etc. suffice for F-hood. Since **F** is vague, such specifications are “rough” in an as yet ill-understood sense.

Second, identifying clear Fs requires representing the specific instances under consideration as *individuals* that may or may not satisfy **F**. Since such representations will typically be complex, I call them *individual conceptions* and symbolize them as [ψ]. Each [ψ] represents, in its represented individual, determinate realizations of some of the types of parts, properties, etc. specified in the conception [F]. To illustrate, where the conception [bald] represents permissible quantities of hair, shapes and sizes of scalps, etc., an individual conception [ψ] will represent a particular quantity of hair on a particular person’s scalp. Where the conception [red] represents a permissible range of shades of color, a [ψ] will represent a determinate shade in some individual (object, color-patch, spatial expanse, etc.). The generation of any individual conception [ψ] is always guided, to the degree possible, by the conception [F]. For example, where a bald person is represented, it is the conception [bald] that ensures that the [ψ] represents the particular person’s head, scalp, and distribution of hair, rather than eye color, posture, and political affiliation.

Third, in identifying clear Fs a determination must be made whether the parts, properties, etc. represented in [ψ]s suffice for F-hood. Where clear Fs are conceived, it is determined that the requirements of F-hood are satisfied. The psychological details of how such determinations are made are largely unknown.

#### 3.2 *Conceiving Clear Not-Fs*

The story of how clear not-Fs are conceived is much the same. The conception [F] guides the generation of an individual conception [ $\psi$ ] for a case under consideration, and it is determined that the case does not satisfy the requirements of F-hood.

There is a spectrum of cases in which individuals represented by [ $\psi$ ]s are judged to be not F. At one end, the [ $\psi$ ]s represent many of the right kinds of parts, properties, etc. required for F-hood. The individuals are nevertheless judged to be not F because either (i) some realizations of those types of parts, properties, etc. fall outside permissible ranges, or (ii) the individuals lack enough of the right kinds of parts, properties, etc. For [chair], an example of (i) is a bench, and an example of (ii) is a small four-legged table. At the other end of the spectrum are individuals lacking most or all of the parts, properties, etc. specified in [F]. A tree judged to be not bald is a case in point. Here [F] contributes little or nothing to the generation of the [ $\psi$ ]. We will be concerned primarily with not-Fs that have many types of parts, properties, etc. in common with Fs.

### 3.3 *Conceiving Borderline Fs*

We now must examine the sorts of psychological states and processes that lead to the manifestation of v-dispositions with respect to particular individuals. Although for ease of expression I shall often refer to this simply as “conceiving borderline cases” (“conceiving borderline Fs,” etc.), it should be kept in mind that v-dispositions are key: increased hesitation in applying ‘F’ or ‘not-F’, changing one’s mind about whether an individual is an F or not-F, and so on. There also is no requirement to think of an individual *as* a borderline case, or even possess the concept **borderline case**.<sup>25</sup>

As with clear Fs and clear not-Fs, an individual conception [ $\psi$ ] and our conception [F] are needed to conceive a borderline F. An individual obviously must be represented if one is to hesitate in applying ‘F’ or ‘not-F’ to it, judge that it is neither clearly F nor clearly not-F, etc. So a [ $\psi$ ] is required. And since all borderline Fs are similar to some clear Fs, [F] will always play a major role in guiding the generation of [ $\psi$ ]s for borderline Fs. [F] will also be involved in judging that the individual neither clearly satisfies nor clearly fails to satisfy the requirements of F-hood, and in causing the manifestation of v-dispositions.

At this point two types of borderline cases must be distinguished. In standard examples of vagueness, borderline cases are conceived by reflecting on a series of individuals that change with respect to a single property or dimension, like quantity of hair, or color. The series leads smoothly from Fs to borderline Fs to not-Fs, or the reverse. With cluster concepts, however, borderline cases can be conceived differently: starting with clear Fs, a series of individuals is imagined such that the *number* of parts, properties, etc. from [F] is reduced until borderline cases eventually are reached. The conception [religion], for example, involves elements like [belief in a supernatural being], [rituals], [prayer], [moral code], and so on. Imagining such features gradually removed from clear religions eventuates in borderline cases. Alston (1964) suggests as examples Hinayana Buddhism and humanism which lack beliefs in a supernatural being, or the Quaker movement which involves no rituals. Adapting some terminology of Alston’s, I call the two types *degree* and *combinatory* borderline cases.<sup>26</sup> I shall be arguing that we can conceive of neither type of borderline case for **conscious state**.

Let us now describe some of what is involved in the capacity to conceive of borderline cases, to manifest v-dispositions, for a vague concept **F**. More specifically,

I shall note four psychologically necessary conditions, based on the story told so far, for possessing such a capacity. Of the four conditions, the first three should seem natural, and the fourth unfamiliar and not initially obvious. The conditions are these:

(C1) it must be psychologically possible for S to represent a series of individuals with individual conceptions  $[\psi_1] - [\psi_n]$ , such that

(C2) the series of individuals contains all of and only Fs, borderline Fs (i.e., individuals with respect to which v-dispositions are manifested), and not-Fs, and in that order,<sup>27</sup>

(C3) individuals' parts, properties, etc. are represented as gradually changing from individual to individual, either along some dimension, or with respect to (something like) their weighted sum, and

(C4) there are at least some parts, properties, etc. represented in S's conception [F], that the Fs, borderline Fs, and not-Fs are all represented by the  $[\psi]$ s as clearly having.

First some points of clarification. I am not claiming that C1 – C4 are *sufficient* for conceiving borderline cases, only necessary (other conditions concerning higher-order vagueness, for example, may also be necessary). Nor am I claiming that a series of individuals satisfying C2 – C4 will be represented *whenever* one conceives borderline Fs, only that it is (normally) always psychologically possible to do so. I list the conditions not because I believe they will necessarily find a place in an illuminating psychological account of our capacity to conceive borderline cases (though they may), but because they are useful for my argument that **conscious state** and **conscious creature** are sharp.

Now for some words in defense of each of C1 – C4. To possess the concept **F**, S must be able to conceive (and hence represent with  $[\psi]$ s) instances falling under **F** and instances not falling under **F**. And given that **F** is vague, competence with the concept also requires being able to conceive (and hence represent with  $[\psi]$ s) borderline Fs (individuals with respect to which v-dispositions are manifested). Since S can select and order what S conceives, C1 and C2 follow. Turning to C3, in conceiving a borderline F, one does not know whether or not it is F partly because the individual's parts, properties, etc. come close to satisfying the requirements of both F-hood and not-F-hood. But that suggests an ability to imagine gradual changes to the individual's parts, properties, etc. (along a dimension or in terms of a weighted sum) sufficient to transform the individual into an F or a not-F.

C4 plays a central role in the argument regarding degree borderline cases. It concerns the relation between representational elements in the conception [F], and elements in the series of  $[\psi]$ s for Fs, borderline Fs, and not-Fs. It states that the  $[\psi]$ s for Fs, borderline Fs, and not-Fs must have elements in common from the conception [F]. (S need not be aware that they do, however.) That there are such common elements should be unsurprising given that the  $[\psi]$ s for the Fs, borderline Fs, and not-Fs are all generated by the conception [F]. (The not-Fs in the series are those whose  $[\psi]$ s the conception [F] has played a major role in generating, so they will have much in common with Fs.)

Although I believe that C4 holds for both degree and combinatorial borderline cases, for the purposes of this paper I need defend it only for degree borderline cases.

With degree borderline cases it is easy to see that there will always be elements from the conception [F] that are common to [ $\psi$ ]s for Fs, borderline Fs, and not-Fs. A clear example is the element representing the property or dimension with respect to which individuals in the series vary. With the conception [red], for instance, a typical series begins with red objects (e.g., color patches), and moves smoothly through borderline red objects to non-red objects. The individuals vary with respect to color, and their [ $\psi$ ]s all have in common the element [color], which is part of the conception [red]. With [bald], individuals vary with respect to quantity-of-hair, and the [ $\psi$ ]s all contain [quantity of hair], an element from [bald]. Notice that in both illustrations, the common element ([color], [quantity of hair]) *clearly* or *definitely* applies to all individuals in the series. There will usually also be many other elements from [F] common to all of the [ $\psi$ ]s. With individuals with differing quantities of hair, for example, each [ $\psi$ ] in the series will include elements like [person], [head], [scalp], etc. In general, therefore, the [ $\psi$ ]s for Fs, borderline Fs, and not-Fs in the series will be highly similar, sharing many elements.

#### 4. Degree Borderline Cases

I turn now to my argument that **conscious state** is not vague, in the sense of having *degree* borderline cases. The argument focuses on C3 and C4. According to C3, for degree borderline cases there must be a property or dimension with respect to which individuals in the series are represented as gradually changing. And we just saw that a representation of such a property or dimension is a clear example of an element satisfying C4—an element common to the [ $\psi$ ]s for all Fs, borderline Fs, and not-Fs in the series, and clearly applicable to each individual in the series. Let [ $\phi$ ] symbolize any such common, clearly applicable, element from the conception [F] that represents a property or dimension with respect to which individuals in a series vary.<sup>28</sup> By C3 and C4, there *must* be such a [ $\phi$ ] if degree borderline cases are to be conceivable for a concept **F**.

We can now say why **conscious state** is not vague. The reason is that it is hard to imagine what such a [ $\phi$ ] could possibly be for the conception [conscious state]. To see that, recall that [ $\phi$ ] must be *from the conception [conscious state]*, and consider three options regarding [ $\phi$ ]’s intentional content: (A) [ $\phi$ ] is an element like [phenomenology], [qualia], [subjectivity], [point of view], [it being “like something”], etc.—elements which, at least for certain senses of those terms, seem to *conceptually suffice for*, or *a priori entail* the presence of consciousness. Put another way, the properties expressed by such elements seem to be unrealizable independently of consciousness; they seem to “involve” consciousness. Call such elements *consciousness-entailing elements*.<sup>29</sup> (B) [ $\phi$ ] is a non-consciousness-entailing element. (C) [ $\phi$ ] is neither clearly consciousness-entailing nor clearly non-consciousness-entailing; that is, [ $\phi$ ] is a borderline case for **consciousness-entailing**, an element which tends to generate v-dispositions. I begin with (A).

It is obvious that no consciousness-entailing elements like [phenomenology], [qualia], etc. from [conscious state] can be common to [ $\psi$ ]s for conscious states, borderline conscious states, and non-conscious states. For, by C4, the common element must clearly apply to all individuals in the series, and since we are considering elements that (appear to the subject to) entail the presence of consciousness, a subject would have to conceive of all the individuals in the series as *clear conscious states*. But then no such individuals, obviously, could be conceived as

either borderline conscious states or clear non-conscious states, violating C2. Option (A) is thus ruled out.

Before turning to (B), consider briefly (C):  $[\phi]$  is a borderline case for **consciousness-entailing**. One can try to conceive of such elements by conceiving borderline cases either for (i) **consciousness** or (ii) **entail**. On (i), one must imagine an element representing a property such that, when the property is realized, so is a borderline conscious state. On (ii), one must imagine an element representing a property such that, when the property is realized, so is a conscious state that is “borderline realized.” Both options are untenable, however, since borderline consciousness-entailing elements must be  $[\phi]$ s from our conception [conscious state]. The trouble is that all elements from [conscious state] are employed in representing *clear* conscious states, which would mean that we sometimes (or often) represent clear conscious states as involving (i) a borderline conscious state, or (ii) a conscious state that is borderline realized. But there is no reason to think we ever represent clear conscious states in either such way (which, anyway, are of questionable coherence). We can safely conclude not only that (C) is not a viable option, but also—a conclusion that will serve us repeatedly below—that [conscious state] contains no borderline consciousness-entailing elements.

I return now to (B). According to (B),  $[\phi]$  is a non-consciousness-entailing element. Although I believe that (B) fares no better than (A) or (C), I have no general argument against (B). My strategy, accordingly, will be to rule out some natural suggestions for  $[\phi]$ s that accord with (B). I believe that the points I raise apply to any candidate  $[\phi]$  that is a non-consciousness-entailing element. However it will remain open to a defender of (B) to seek a  $[\phi]$  to which my arguments do not apply.

#### *4.1 Non-Consciousness-Entailing Elements that Violate the Requirement of Neutrality*

I begin by discussing a large class of properties, representations of which many will insist can serve as  $[\phi]$ s that accord with (B). Many materialists who identify conscious states with neurophysiological (or other complex physical) states, or functional states, will take it as part of the conception [conscious state] that such states have neurophysiological (/functional) properties—just as it is part of our conception [water] that water is  $H_2O$ . But then there could be a  $[\phi]$  from [conscious state] that represents neurophysiological properties as such, and so is not consciousness-entailing. And beginning with a clear conscious state with neurophysiological properties, gradual alterations (removing atoms one by one from a brain, say) can lead to borderline and non-conscious states that also have neurophysiological properties.<sup>30</sup> So could there be a  $[\phi]$  like [neurophysiological property N] or [functional property F]?

There is an obvious difficulty with this suggestion. As emphasized above, I wish to argue for the sharpness of a concept that is *pretheoretical* or *neutral* with respect to materialism, dualism and idealism. That being the case, one clearly cannot assume that representations as of such physical (/functional) properties are part of the conception associated with *that* concept, since such representations are inconsistent with the concept’s neutrality. So the suggestion is illegitimate.

The materialist who appeals to *complex* physical or functional properties—call such a materialist a *c-materialist*—might retort: Who cares whether that crude, pretheoretical, concept is sharp or not? The *correct* concept (or at least a more correct

concept) whose associated conception represents complex physical/functional properties *is* vague, and that is all that need concern us—just as the vagueness of our modern biological concept **life** is what counts, not that earlier versions of the concept may have been sharp. However, the c-materialist should care whether our current, neutral concept is sharp. For it is consciousness so conceived that is in play in debates about the mind-body problem. And, more to the point, it is consciousness so conceived that many c-materialists aim to explain by appeal to complex physical properties.

Below I shall consider whether the c-materialist can legitimately ignore the neutral concept, thus showing my project to be irrelevant. For now I press on with my argument that the pretheoretical concept is sharp, and emphasize that the c-materialist response under consideration is *not* an attempt to suggest a  $[\phi]$  from the neutral conception, but rather to argue that that conception is irrelevant. So the response is not to the point. There are, however, other ways in which one might hope to find a  $[\phi]$  that satisfies (B). One might suggest, for instance, that there are non-consciousness-entailing elements that are neutral in the required way, like [temporal extension] or [intensity].

#### 4.2 Temporal Extension

It is natural to look to [temporal extension] as a candidate  $[\phi]$ , since conscious states, borderline conscious states (if they exist), and non-conscious states, are all clearly temporally extended. In addition, our conception [conscious state] represents conscious states as temporally extended, thus satisfying the requirement that  $[\phi]$  be from the conception [F]. If we start with a temporally extended experience, and imagine a series of progressively shorter experiences, it will eventually be unclear whether there is an experience at all, after which it will become clear that there is no experience. So can [temporal extension] serve as a  $[\phi]$  for **conscious state**?

Consider first what kinds of progressively shorter experiences we are meant to be imagining. Auditory experiences of a tone? Visual experiences of a red stimulus? It is unclear that a series of such experiences can provide what is wanted. It may eventuate in borderline cases of concepts for *specific types* of experiences like **auditory experience of a tone**, but it is questionable whether it can eventuate in borderline cases for **conscious state**. One reason to think it cannot is that a subject presented with a series of progressively shorter auditory or visual stimuli will be clearly conscious throughout. Perhaps what is needed is a series of progressively shorter *overall* or *maximal* experiences (reflecting what it is like to be an individual at a time). But it is far from obvious how such a series is to be imagined (try it). On the other hand, if one's maximal conscious state is composed of distinct conscious states (as one's maximal mental state is composed of conscious and unconscious states), perhaps alterations to a component conscious state could eventuate in a borderline case for **conscious state**, even though one's maximal experience remains clearly conscious. In that case a series of progressively shorter auditory or visual experiences might be to the point after all.

Though I believe that many concepts for determinate types of conscious states (e.g., **pain**) are vague,<sup>31</sup> I also believe that borderline cases for such concepts (e.g., experiences near the onsets and offsets of pains) are always clearly conscious states— independently of their being components of clearly conscious maximal experiences. I shall not argue for that here, however. Rather, I shall leave it open for the sake of argument that borderline cases for specific types of conscious states might be

borderline conscious states. My strategy will be to show that a series of progressively shorter experiences *of any sort* cannot give rise to borderline conscious states (states the conceiving of which generate v-dispositions when [conscious state] is applied).

For [temporal extension] to be a  $[\phi]$  for **conscious state**, there must be a series of individuals that vary with respect to temporal extension, such that at one end they are categorized as clear experiences, at the other as clear non-experiences, and in between as borderline cases (v-dispositions are manifested with respect to them). The  $[\psi]$ s representing the individuals, however, must contain more content than merely [having duration d]. For as individual conceptions they must represent temporally-extended *individuals* or *entities* of some sort that are conscious, borderline conscious, or non-conscious. Which sort? There are three main options: (a) entities characterized in consciousness-entailing terms: conscious experiences of some sort; (b) entities characterized in non-consciousness-entailing terms; or (c) entities characterized in borderline consciousness-entailing terms. On option (a), each  $[\psi]$  will include an element like [conscious experience of duration d], [auditory experience of duration d], etc. Such  $[\psi]$ s, however, can have no application to borderline experiences or non-experiences, since anything represented *as a conscious experience*, no matter how brief, is a representation of a clear conscious experience. (Representing an entity as an F *just is* to treat the entity as a clear F.) So (a) must be rejected. On (b), the only imaginable candidates are entities characterized in broadly physical (/functional) terms, so each  $[\psi]$  will include an element like [physical/functional state of duration d]. But since, in general, the  $[\psi]$ s are generated by the conception [F], [conscious state] must generate  $[\psi]$ s with elements like [physical/functional state of duration d]. But to do that, it seems, [conscious state] must *contain* elements representing physical (/functional) properties, which violates the neutrality requirement. So (b) must be rejected. Option (c) must be rejected for similar reasons: [conscious state] must generate  $[\psi]$ s with borderline consciousness-entailing elements, but we concluded above that [consciousness] contains no such elements. It follows that [temporal extension] is not a suitable  $[\phi]$ .

Why did it *seem* like a gradual decrease in duration could lead from experiences to borderline experiences to non-experiences? I suggest it is because the structure of the imagined case is *epistemologically similar* to cases in which we do recognize a concept as vague. If we start with an experience of a stimulus whose duration is gradually decreased over a series of presentations, we will at first be *certain* that we are experiencing the stimulus, then *uncertain* we are experiencing it, and finally certain that we are *not* experiencing it. Epistemologically, that is much like considering a series of people with increasing amounts of hair, where we are at first certain that they are bald, then uncertain, then certain that they are not bald.

But being uncertain where a concept's boundary lies is not the same as conceiving borderline cases for the concept, or manifesting v-dispositions. The uncertainty may reflect an inability, unrelated to the concept's vagueness or sharpness, to sort cases as falling or not falling under the concept. Though my concept **pitch lower than 440 Hz** is sharp (or at least quite sharp), if presented with tones of gradually increasing frequency (say, from 200-800 Hz), I will at first be certain that they are lower than 440 Hz., then uncertain for frequencies in the rough vicinity of 440 Hz., and finally certain that they are not lower than 440 Hz. But that does not mean I am conceiving borderline cases for **pitch lower than 440 Hz**, or even that I believe I am. I may believe my concept is sharp and so believe the cases I am hesitating over *could not be* borderline cases. (If I believe the boundary is vague, I

still may believe I am not detecting borderline cases—say, if I believe they lie somewhere above 439.9 Hz.) What explains my pattern of judgments in this case, then, is not the concept's vagueness or sharpness. It is that, since I lack perfect pitch, in the absence of an oscilloscope (say), I lack a precise means of detecting the boundary.

Similarly, that we are unable to say whether we have undergone an experience, or a specific type of experience, does not mean that we are conceiving borderline cases. Our uncertainty can be explained in other ways: for instance, by supposing we lack an accurate and infallible means of detecting our experiences, and that the processes that issue in our introspective judgments are shaped by that fact. Notice that this explanation presupposes what I called above 'consciousness<sup>a</sup>' since it assumes that experiential features can go undetected. Explanations without consciousness<sup>a</sup> are also possible: one can appeal to performance errors, memory constraints, etc., to explain how, in spite of one's expressed uncertainty about the occurrence of an experience, one *was* briefly aware of the presence or absence of the experience. Perhaps the awareness got masked or overridden, was never properly encoded in memory, etc., with the result that at the verbal-report stage the individual was at a loss as to what to say. So the pattern of judgments is in principle explicable without appeal to vagueness. That the pattern is epistemologically similar to that found when conceiving borderline cases is thus insufficient for inferring that we are conceiving borderline cases for **conscious state** or **auditory experience of a tone**.

The unsuitability of [temporal extension] as a [ $\phi$ ] can be brought home by contrasting **conscious state** with the concept **bald**, for which we conceive of borderline cases. With **bald** we have a clearly conceptualized series of individuals, with clearly conceptualized changes across them (e.g., with respect to quantity of hair). And somewhere in the series we find ourselves (e.g.) unable to say whether the individuals-with-their-particular-quantities-of-hair are bald. With stimuli of decreasing duration, in contrast, once we become unsure that there is an experience of the stimulus, there are no clearly conceptualized individuals about which we are unsure whether *they* fall under the concept **conscious state**, or **auditory experience of a tone**. And when we later become certain that we are not experiencing the stimulus, there are no clearly conceptualized individuals about which we are sure they are not experiences, or auditory experiences of a tone. So the case differs considerably from genuine cases of conceiving borderline cases: it clearly violates C1, as well as C2 – C4, which depend on C1.

#### 4.3 Intensity, Etc.

A similar proposal concerns [intensity]. Tye (1996) suggests that variations in intensity might give rise to genuine borderline experiences:

Suppose you are participating in a psychological experiment and you are listening to quieter and quieter sounds through some head-phones. As the process continues, there may come a point at which you are unsure whether you hear anything at all. Now it could be that there is still a fact of the matter here...; but equally it could be that it is objectively indeterminate as to whether you still hear anything. So, it could be that there is no fact of the matter about whether there is anything it is like for you to be in the state you are in at that time. In short, it could be that you are undergoing a borderline experience. (pp. 682-3; see also Tye 2000, pp. 180-1)

This proposal closely parallels the temporal extension case, so it can be dealt with quickly. There are similar problems regarding whether progressively quieter sounds can lead to borderline cases for **conscious state**, or whether progressively “less intense maximal states” (whatever that might mean) are needed. As above, I leave open for the sake of argument that borderline cases for specific types of conscious states might be borderline conscious states.

The argument is the same. Just as [having duration d] provides insufficient content for a [ $\psi$ ], so does [having intensity i]: there must be an intensity *of something*. Again, the options are for the [ $\psi$ ]s to represent entities characterized in (a) consciousness-entailing terms: conscious experiences; (b) non-consciousness-entailing terms; or (c) borderline consciousness-entailing terms. Reductions in intensity across a series of *experiences* always leave clear experiences, so they can lead neither to borderline experiences nor non-experiences. But any non-phenomenal characterizations of entities must involve broadly physical (/functional) elements, which cannot be assumed to be part of [conscious state] without violating the neutrality requirement. Finally, (c) requires that [consciousness] contain borderline consciousness-entailing elements, contrary to our conclusion that it contains none. So none of the three options work. Again, the suggestion’s *prima facie* appeal can be explained in terms of the case’s epistemological features.

Other neutral, non-consciousness-entailing elements similar to [temporal extension] and [intensity] might be imagined. Two possibilities are [structural complexity] and [clarity]. Perhaps it might be thought that a series of experiences whose degree of structural complexity or clarity gradually decreases could eventuate in borderline experiences. I shall not discuss these possibilities, since it should be fairly clear that arguments similar to those already given could be marshaled against them.

I conclude, at least until shown otherwise, that there can be no non-consciousness-entailing [ $\phi$ ]s for degree borderline cases for **conscious state**. We have thus ruled out (B), in addition to (A) and (C). Since (A), (B), and (C) are exhaustive, it follows that there can be no degree borderline cases for **conscious state**.

## 5. Combinatory Borderline Cases

Here is a quick argument why **conscious state** cannot have *combinatory* borderline cases. Starting with clear Fs, combinatory borderline cases are reached by imagining a series of individuals such that the number of parts, properties, etc. represented in the conception [F] is gradually reduced from individual to individual. Notice that as elements from [F] are removed, each successive [ $\psi$ ] in the series not only represents its individual without the removed elements, but as *lacking the properties* the removed elements express.<sup>32</sup> With that in mind, consider a [ $\psi$ ] representing a clear conscious state. It will include consciousness-entailing elements like [phenomenology], [qualia], [subjectivity], etc. from the conception [conscious state]. Removing any element from that [ $\psi$ ] will either leave consciousness-entailing elements in the next [ $\psi$ ] in the series, or eliminate the last consciousness-entailing element. If any consciousness-entailing elements remain, the [ $\psi$ ] will represent a clear conscious state. If none remain, then since as was argued above [consciousness] contains no borderline consciousness-entailing elements, the [ $\psi$ ] will contain only clear non-consciousness-entailing elements. Since that [ $\psi$ ] will represent its individual as lacking *all* properties expressed by all consciousness-entailing elements

from earlier [ $\psi$ ]s in the series, and since the process of generating the series is wholly one of *removing elements*, the individual will be represented as possessing no properties that suffice for consciousness. Consequently it will be represented as a clear non-conscious state. All options having been covered, it follows that reaching combinatory borderline cases for **conscious state** is impossible.

## 6. Conclusion

We have argued against the possibilities of conceiving both degree and combinatory borderline cases for **conscious state**. Although there are other, less direct ways of reaching borderline cases, there is no reason to think that **conscious state** can be understood as vague in any such way.<sup>33</sup> I conclude that we can conceive of no borderline cases whatsoever for **conscious state**; or in other words, that there are no circumstances in which applications of **conscious state** lead to the manifestation of v-dispositions. Assuming that the upshot of the discussion from Section 1 is correct—that a concept's vagueness is to be explained in terms of the manifestation of v-dispositions and the characteristic phenomenology—it follows that **conscious state** is sharp.

Given that a creature is conscious if and only if it can be in conscious states, the same holds for **conscious creature**. A borderline conscious creature would have to enjoy borderline conscious states, but we can conceive of no such states. We can conceive of creatures only having or lacking clearly conscious states—which is to say that we can conceive of no borderline conscious creatures. One can of course *say* of a creature that it has borderline conscious states, but in doing so, I submit, one does not understand what is being attributed to the creature.

Both **conscious state** and **conscious creature**, therefore, are sharp. Two kinds of sharp concepts can be distinguished, however, and it is worth seeing to which of those **conscious state** and **conscious creature** belong. First, there are sharp concepts which, like vague concepts with degree borderline cases, have associated conceptions with the following two features: (a) they contain an element that applies to both Fs and not-Fs, and (b) they are such that gradual changes with respect to the properties represented by that element lead from Fs to not-Fs. Take the sharp concept **shorter than one meter**, and imagine a series of objects of gradually increasing height starting below one meter and ending above one meter. (If **meter** is vague, a purely mathematical example can be substituted.) Since each object has height, there is an element from the conception [shorter than one meter] (viz. [height]) that is common to all of the [ $\psi$ ]s, and changes with respect to height lead from objects shorter than one meter to objects not shorter than one meter. Clearly many other sharp concepts are of this sort.

But there is another kind of sharp concept. Take **spatially extended**. That seems sharp: either an entity is spatially extended or it is not. But there appears to be no element from [spatially extended] that applies to both spatially extended objects and objects lacking spatial extension (e.g., abstract objects, Cartesian souls, etc.), such that changes with respect to the property represented by the element lead from spatially extended objects to non-spatially-extended objects. The realm of spatially extended objects seems somehow more detached or cut off from non-spatially-extended objects than do objects shorter than one meter from objects one meter or greater. Similar sharp concepts might be **integer**, **universal**, **material**, **event**, **abstract object**, etc. I suggest that **conscious state** and **conscious creature** also

belong to this family of sharp concepts, which seem to apply to parts of reality that share no boundaries with other parts.

## 7. An Objection

Consider now an objection to my use of C1 – C4 in arguing that **conscious state** is sharp, an objection that appeals to consciousness<sup>-a</sup>. One might agree that C1 – C4 do not apply to **conscious state**, but insist that **conscious state** differs from other concepts in that C1 – C4 *cannot* apply—and not because the concept is sharp. The reason, rather, concerns the nature of introspection. Any mental state that we introspect we will judge to be clearly conscious. Assuming we can imagine only mental states we have introspected (or are similar to, or constructed out of, such states), it is impossible to imagine states which we are unsure are conscious. But that does not mean that borderline conscious states do not exist, just that they cannot be introspected.

At this point the objector appeals to consciousness<sup>-a</sup>, emphasizing that the conscious<sup>-a</sup>/unconscious boundary lies beyond the range of mental states to which we have introspective access, and are thus imaginable. The temporal extension case can serve as an illustration. As the stimuli get progressively shorter and the subject becomes unsure whether anything has been experienced, the subject stops having conscious<sup>+a</sup> experiences and starts undergoing conscious<sup>-a</sup> states. Only after the subject has been reporting no awareness of the stimuli for some time do the conscious<sup>-a</sup> states shift to unconscious perceptions (which, let us assume, are demonstrable by behavioral measures). Now because the conscious<sup>-a</sup>/unconscious boundary lies outside the region of introspectable states, we can neither introspect states near that boundary nor imagine what they are like. But for that very reason we have no justification for believing that the transition at the boundary *cannot be* gradual, fuzzy, or blurred. Now if that boundary is the conscious/unconscious boundary, as claimed in Section 2.2, it follows that there is no reason not to believe that **conscious state** is vague.

The objection begins with the idea that the conscious<sup>-a</sup>/unconscious boundary is not introspectable, and concludes that there is no reason to suppose that that boundary is not vague. But lacking a reason to believe that a boundary is not vague is not yet to conceive of it as vague—something I claim cannot be done with the conscious<sup>-a</sup>/unconscious boundary. The objector agrees, but explains that as an artifact of the nature of introspection, which has nothing to do with whether there are borderline cases. But the matter is more complex. Although we cannot imagine what it is like (for us) to be in conscious<sup>-a</sup> states, we can imagine something about what *they* are like, as I suggested earlier. Indeed, I claimed we must be able to if we are to have reason to treat conscious<sup>-a</sup> states as *conscious*. But then we can imagine something about the boundary: it involves a transition from the presence of phenomenology to its absence. But now far from it being correct to suppose that the boundary, since it is hidden, may be vague, the boundary seems intuitively sharp! So whereas one initially might have thought that C1 – C4 cannot apply to **consciousness**, C1 – C4 apply after all (since we can conceive of states at the boundary), and the defender of the vagueness of **conscious state** must resume the search for a  $[\phi]$ .

Even if we cannot imagine anything about the consciousness<sup>-a</sup>/unconscious boundary, that is still not a reason to believe that **conscious state** might be vague. For regardless of *why* one cannot conceive of borderline cases for a concept **F**, or why there are no associated v-dispositions or characteristic phenomenology, *if* matters are

that way, then given the psychological requirements for vagueness spelled out above, **F** cannot be vague.

## 8. Implications and Conclusion

If the argument of this paper is correct, we have a defense and partial explanation of the widespread intuition that our current concepts **conscious state** and **conscious creature** are sharp. As I have argued in detail elsewhere, this result has far-reaching implications for common versions of familiar metaphysical theories of consciousness—namely, the identity theory, functionalism, and dualism.<sup>34</sup> The common versions are those that make essential appeal to *complex* physical or functional properties, thus entailing that **conscious state** and **conscious creature** are vague. And the main implication is that, if our current concepts **conscious state** and **conscious creature** are correct, such theories of consciousness are false, or should at least be rejected. Two main options remain for advocates of those theories: (i) seek accounts of consciousness at the level of fundamental physics where sharp concepts may be required; or (ii) claim that our current concepts **conscious state** and **conscious creature** are not correct. Option (ii) has two variations: (iia) conclude that the concepts **conscious state** and **conscious creature** fail to refer, adopting an eliminativist position; and (iib) claim that future, correct versions of the concepts will be vague.

I conclude with a few words related to (iib). Recall the c-materialist's objection (from sec. 4.1) to my insistence that we focus on our pretheoretical, neutral concept **consciousness**. The objection was that it is irrelevant whether that concept is sharp, since what counts is whether a more correct concept expressing complex physical/functional properties is sharp or not. I replied that the c-materialist should care about the neutral concept, since it is consciousness so conceived that c-materialists seek to explain. However, the matter is more complex.

Consider early stages in the development of biology when most people's concept **life** was still sharp, but biologists were beginning to glimpse how life might be explained without appeal to ideas such as vital spirit. Imagine somebody arguing that **life** is sharp, and a pioneering biologist objecting that that is irrelevant since a future, more correct concept **life** will be vague. An analogue of my response would have been to say that the pioneering biologist *should* care about the sharp concept, since it is life so conceived that biology aims to explain. Of course, to us now that response appears clearly misguided since modern biologists were obviously right to ignore the sharp concept. Similarly, the objection goes, c-materialists are right to ignore the sharpness of our current concept **consciousness**, since the correct concept that will supplant it is vague.

I believe that what needs to be said is this. The pre-modern biological concept **life**, so long as it had not yet been undermined by modern biology, *did* pose a challenge to any theory entailing that **life** is vague: it provided good reason to believe such theories are false. Of course, biology eventually met that challenge, but only by developing theories of such scope and power that earlier views of life could no longer be sustained. Now the important point is that, at the time, it was the *pioneering modern biologists* who bore the burden of proof, since they wished to overthrow a widely accepted and highly intuitive way of thinking about living creatures. It was upon them to develop theories so impressive as to make abandoning key features of the earlier concept unavoidable.

Similarly, the sharpness of our pretheoretical concept **consciousness** now threatens any c-materialist view that employs a vague concept of consciousness (or of what it calls ‘consciousness’). Of course, it must be granted that c-materialism may be true, in which case a vague **consciousness** will eventually supplant our current sharp concept. But c-materialism has hardly begun to provide the kind of explanation of consciousness that biology provided for life. Now just as the burden was on biology to offer that explanation, so is it now on c-materialism to develop an explanation of consciousness that is sufficiently persuasive to justify our rejecting central features of our current concept, and adding features it lacks. Unless and until such a c-materialist theory is provided, there is reason to believe that c-materialist theories that employ vague concepts of what they call ‘consciousness’ are either false or not about consciousness at all.

## Notes

<sup>1</sup> Two familiar senses of the term ‘concept’ are the *philosophical sense* (roughly, an abstract meaning, sense, etc.), and the *psychological sense* (roughly, a mental representation that can be a constituent of thoughts). I refer to these, respectively, as concepts<sup>PHL</sup> and concepts<sup>PSY</sup>. Boldface type is reserved for concepts<sup>PHL</sup>. Expressions within square brackets refer to conceptions, or elements of conceptions (see Section 2).

<sup>2</sup> See also Campbell 1984, Chalmers 1996, p. 105, Copeland 1993, p. 257, fn. 25, Strawson 1994 p. 153, among others.

<sup>3</sup> Rosenthal (2002, p. 417, fn. 3) is an exception who believes that “it may well be that conscious states can occur without the creature itself being conscious.” I shall assume the truth of the biconditional in the text.

<sup>4</sup> Cf. Wright (1975), Sainsbury (1990), Greenough (2003), among others, who discuss a possible use of ‘borderline case’ according to which the expressed concept has sharp boundaries.

<sup>5</sup> Greenough (2003) has offered a “minimal” definition of ‘vagueness’ which is meant to be neutral among competing theories of vagueness. I do not discuss his definition because it applies to only one of two types of vagueness distinguished by Alston (1964) and others (as Greenough himself acknowledges, p. 240, fn. 4). My discussion, however, concerns both types (see Section 3.3).

<sup>6</sup> See also Block 1992, p. 205, and 2002, Carruthers 2000, p. 22, 256 fn. 9, Churchland 1984, p. 152, Dretske 1995, pp. 167-8, Lycan 1996, p. 162, fn.7, Papineau 1993, 2002, Tye 1996, 2000, Unger 1988, p. 300, 306 ff., among others.

<sup>7</sup> To see that the vagueness is not explained, notice that for any correct concept **F**, that same concept can be imagined counterfactually to have been incorrect with respect to its vagueness/sharpness. For example, even if our current, concept **life** is correct, that same vague concept would have been incorrect had life been such as to require a sharp concept. Since **life** remains vague across such actual and counterfactual situations while the nature of life differs, the nature of life cannot explain **life**’s actual vagueness even though it entails it.

<sup>8</sup> Papineau’s (2002) recent argument for the vagueness of our phenomenal concepts falters for just this reason. For discussion see Antony 2006b.

<sup>9</sup> Notice that I am not here assuming semantic internalism in any standard sense. Indeed, my argument that a concept **F** can change from sharp to vague (or vice versa) while maintaining reference to Fs *assumes externalism*. Both the vitalistic and molecular biological concepts **life**, for instance, are concepts *of life* in virtue of being related to the same external phenomenon. What is an internal, psychological matter is the concept’s vagueness/sharpness.

<sup>10</sup> ‘Phenomenology’ is to be understood here in the broad, Nagelian *what it is like* sense (see Nagel 1974). For an illustration, compare the phenomenology associated with uncertainty whether a 13-year old girl is a child or not, with the phenomenology associated with uncertainty whether a person who entered a poorly-lit room is a man or a woman. Notice that such a phenomenological difference poses no threat to the epistemic view of vagueness, so long as vagueness is viewed as a *special kind* of ignorance of sharp boundaries, as it is on Williamson’s (1994) theory, for example.

<sup>11</sup> Concepts<sup>PSY</sup> are explained in note 1, and conceptions in Section 2.1. If it turns out that because of the “hard problem” of consciousness (Chalmers 1996) psychology cannot account for

phenomenological features of experience, accounting for the structural and functional features of the phenomenology will do.

<sup>12</sup> Williamson (1997, 945 ff.) claims there could be a vague term for speakers who lack v-dispositions. He imagines a hypothetical “opinionated macho community” in which everyone confidently applies ‘bald’ or its negation to each case, in spite of considerable disagreement among speakers. Although the concept is intuitively sharp for each member of the community, Williamson maintains that ‘bald’ is vague nonetheless. However, because most people would likely insist that they mean something different by ‘bald’ than others in the community, it is doubtful that there is a single meaning for ‘bald’ in the community (cf. Horwich 2000, p. 91).

<sup>13</sup> See also Papineau 2002, Tye 1996, p. 681, Unger 1988, p. 298.

<sup>14</sup> See note 1.

<sup>15</sup> Notice that I am assuming that the elements of conceptions are themselves conceptions. Although nothing hangs on that assumption, it does seem reasonable: when we identify a case of baldness by employing elements like [scalp], the representation of scalps we employ will typically itself be complex (e.g., distinct regions of the scalp are likely to be represented in evaluating overall hair distribution); and similarly for other conceptions and elements. Notice that there is no claim here about our *concepts*<sup>PSY</sup> being complex (more on this below).

<sup>16</sup> I appeal here to McGlaughlin’s (1995, p. 121) distinction between the manifestation and activation of dispositions: “A type of thing a disposition is a tendency to be or do is a *manifestation* of the disposition....Dispositions [also] have activating conditions....Both cracking and shattering [for example]...can manifest the disposition of fragility, and both being struck and being dropped can activate it.”

<sup>17</sup> And similarly our concepts **conscious state** and **conscious creature**. For an argument ‘consciousness’ is univocal in the current consciousness literature, see Antony 2001b.

<sup>18</sup> See Laurence and Margolis 1999 for examples.

<sup>19</sup> Cf. Woodfield 1991.

<sup>20</sup> Were it not true of most of our conceptions, much of the empirical research on concepts<sup>PSY</sup>/conceptions would be inexplicable.

<sup>21</sup> *Meditations on First Philosophy* (1641) in Descartes 1984.

<sup>22</sup> *Prima facie*, because, as was just pointed out, many elements of our associated conceptions are unconscious; so unconscious elements from **consciousness** might rule out one or more of those theories. Another possibility is that elements of which we are aware entail in a non-obvious way the falsity of one of those theories. In the absence of evidence for either possibility, however, it is rational to treat the concept as neutral with respect to the theories.

<sup>23</sup> See, e.g., “Letter to Mersenne”: “Nothing can be in...my mind, of which I am not aware” (Dec. 31, 1640, in Descartes 1991).

<sup>24</sup> James’ discussion of the “fringe” is in James 1983, Ch. 9. See Antony 2001a for some further discussion of consciousness<sup>a</sup>.

<sup>25</sup> Nor, again, is there assumed to be a sharp line between clear Fs or clear not-Fs, on the one hand, and borderline Fs, on the other.

<sup>26</sup> Alston speaks of degree and combinatory vagueness.

<sup>27</sup> In distinguishing among three categories, it may appear that I am assuming borderline Fs to be distinct from both Fs and not-Fs. Williamson, however, has argued that a contradiction follows from that assumption (see, e.g., his 1994, Section 7.2). I am not assuming that, however (nor would I want to, given my desire to remain neutral with respect to the epistemic view). My claim, rather, concerns three categories of *mental representations* which individuals who possess vague concepts are psychologically capable of generating. And regardless of whether each borderline F must be either an F or a non-F, it is false that each individual represented as a borderline F (or with respect to which v-dispositions are generated) must either be represented as an F or represented as a non-F. At the level of mental representations, three distinct categories (at least) are required.

<sup>28</sup> Cf. Wright’s (1975, p. 334) concept  $\phi$ .

<sup>29</sup> As far as I can tell, I need be committed here only to *apparent* conceptual sufficiency, a priori entailment, etc., which is consistent with there being no such clearly characterizable, theoretically useful (etc.) notions.

<sup>30</sup> See Antony 2006a for further discussion.

<sup>31</sup> See the second to last paragraph in Section 1.

<sup>32</sup> For example, if a  $[\psi]$  represents a chair with the elements [seat], [four legs] and [back], and the next  $[\psi]$  in the series represents an object with [seat] and [four legs] but not [back], it is not left open that

the second object *has a back*, which was simply not represented. Rather it is somehow part of the content of the second [ $\psi$ ] (or entailed by it, etc.) that the object *lacks* a back.

<sup>33</sup> One way is to reach borderline cases for a concept **F** by reaching borderline case for an *element* of the conception [F]. Call these *vague-element borderline cases*. Though there is much that can be said about these cases, I shall ignore them. That is because I believe (though I shall not argue) that whenever vague-element borderline cases are possible for a concept **F**, so are combinatory borderline cases. That being so, the possibility of vague-element borderline cases for **conscious state** is ruled out by my argument against combinatory borderline cases.

<sup>34</sup> See Antony 2006a.

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## References

- Antony, M. (1999). Outline of a general methodology for consciousness research. *Anthropology and Philosophy*, 3, 43-56. URL: <http://research.haifa.ac.il/~antony/papers/Methodology.htm>
- Antony, M. (2001a): 'Conceiving Simple Experiences', *The Journal of Mind and Behavior* 22(3), 263-286.
- Antony, M. (2001b): Is 'Consciousness' Ambiguous?, *Journal of Consciousness Studies* 8(2), 19-44.
- Antony (2006a). "Vagueness and the Metaphysics of Consciousness," *Philosophical Studies* 128(3), 515-538.
- Antony (2006b). "Papineau on the Vagueness of Phenomenal Concepts." *Dialectica* 64(4), 475-483.
- Alston, W. P. (1964). *Philosophy of Language*. Englewood Cliffs, NJ: Prentice-Hall.
- Block, N. (1992). "Begging the Question Against Phenomenal Consciousness." *Behavioral and Brain Sciences* 15(2), 205-206.
- Block, N. (2002). "The Harder Problem of Consciousness." *Journal of Philosophy* XCIX, 391-425.
- Campbell, K. (1984). *Body and Mind*. (2nd ed.). Notre Dame: University of Notre Dame Press.
- Carruthers, P. (2000). *Phenomenal Consciousness*. Cambridge: Cambridge University Press.
- Chalmers, D. J. (1996). *The Conscious Mind*. New York: Oxford University Press.
- Churchland, P. (1984). *Matter and Consciousness*. Cambridge, MA: MIT Press.
- Copeland, J. (1993). *Artificial Intelligence*. Oxford: Blackwell.
- Dennett, D. (1998). "Animal Consciousness: What Matters and Why." In D. Dennett (Ed.), *Brainchildren*. Cambridge: MIT Press.

- Descartes, R. (1984). *The Philosophical Writings of Descartes, Vol. 2*, translated by J. Cottingham, R. Stoothoff, and D. Murdoch. Cambridge: Cambridge University Press.
- Descartes, R. (1991). *The Philosophical Writings of Descartes, Vol. 3*, translated by J. Cottingham, R. Stoothoff, D. Murdoch, and A. Kenny. Cambridge: Cambridge University Press.
- Dretske, F. (1995). *Naturalizing the Mind*. Cambridge: MIT Press.
- Fodor, J. A. (1998). *Concepts*. New York: Oxford University Press.
- Greenough, P. (2003). "Vagueness: a minimal theory," *Mind* **112**, 235-281.
- Horwich, P. (2000): 'The Sharpness of Vague Terms', *Philosophical Topics* 28(1), 83-92.
- James, W. (1983). *The principles of psychology*. Cambridge: Harvard University Press. (Originally published 1890)
- Laurence, S., & Margolis, E. (1999). "Concepts and Cognitive Science." In E. Margolis & S. Laurence (Eds.), *Concepts: Core Readings*. Cambridge, MA: MIT Press.
- Lycan, W. G. (1996). *Consciousness and experience*. Cambridge, Mass.: MIT Press.
- McGinn, C. (1996). *The Character of Mind*. (2nd ed.). Oxford: Oxford University Press.
- McGlaughlin, B. (1995). "Disposition," in J. Kim and E. Sosa (eds.), *A Companion to Metaphysics*. Oxford: Blackwell.
- Nagel, T. (1974). "What Is It Like to Be a Bat?" *Philosophical Review* **83**, 435-450.
- Papineau, D. (1993). *Philosophical Naturalism*. Oxford: Blackwell.
- Papineau, D. (2002). *Thinking About Consciousness*. Oxford: Oxford University Press.
- Rosenthal, D. (2002). "Explaining Consciousness," in D. Chalmers (ed.) *Philosophy of Mind*. Oxford: Oxford University Press.
- Russell, B. (1923). "Vagueness." *Australasian Journal of Philosophy and Psychology* **1**, 84-92.
- Sainsbury, M. (1990). "Concepts Without Boundaries," an Inaugural Lecture, given at King's College London, November 6, 1990. Reprinted in R. Keefe and P. Smith (eds.), *Vagueness: A Reader*. Cambridge MA: MIT Press, 1997.
- Searle, J. (1992). *The Rediscovery of the Mind*. Cambridge, MA: MIT Press.
- Strawson, G. (1994). *Mental Reality*. Cambridge, MA: MIT Press.
- Tye, M. (1996). "Is Consciousness Vague or Arbitrary?" *Philosophy and Phenomenological Research* **56**(3), 679-685.
- Tye, M. (2000). *Consciousness, Color, and Content*. Cambridge, MA.: MIT Press.
- Unger, P. (1988). "Conscious Beings in a Gradual World." *Midwest Studies in Philosophy* **12**, 287-333.
- Williamson, T. (1994): *Vagueness*. London: Routledge.
- Williamson, T. (1997): 'Reply to commentators', *Philosophy and Phenomenological Research* 57(4), 945-953.
- Woodfield, A. (1991). "Conceptions." *Mind* **100**(4), 547-572.
- Wright, C. (1975). "On the Coherence of Vague Predicates." *Synthese* **30**, 325-365.