

Pain Without Power

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Abstract

Some theories of consciousness emphasize its relationship to language, its emergent quality, and its causal role. Prominent among these theories is the one that Dennett has been developing for nearly four decades. According to Dennett's most recent version, consciousness is a kind of cerebral clout. But consideration of examples of pain—arguably the best candidate on offer for a paradigm of consciousness—reveals that clout is neither necessary nor sufficient for consciousness. Moreover, pain doesn't necessarily have the aftermath that is predicted by Dennett's Clout Theory (CT); pain cannot always be accommodated by Dennett's methodology; and, pain does not always conform to Dennett's proposed ontology. Dennett might wish to substitute episodic memory as a preferred paradigm for consciousness, but episodic memory is shown to be non-essential. And, were it to be treated as a paradigm of consciousness, it would create new explanatory problems for CT. Rather than abandoning CT, because it does seem to help explain some pain phenomena and because it does comport well with certain views of language, I propose that some of its more intriguing proposals be retained and treated as hypotheses to guide further empirical inquiry. Finally, I recommend some specific empirical cases wherein relevant research might be pursued.

Keywords: Pain, Consciousness, Episodic Memory, Dennett, Super Blindsight, and Rewiring Hypothesis

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I. Introduction

Not long ago Wall (1999: 153-5) wrote: “Until some ten years ago, pain in newborn babies was neglected and even denied by professionals...”² Writing at approximately the same time, Damasio (1999: 107) recalled that while in neurology training in medical school he asked “some of the wisest people around me how we produced the conscious mind.” Always he received the same answer—language. The “wise” people agreed that consciousness was a verbal interpretation of ongoing mental process that enabled us to see things from a proper distance. They apparently assumed that the verbal interpreting was that which provided us with the capacity for conscious experience. And even more recent claims by medical practitioners (e.g. Lee et al. 2005) suggest that this assumption remains widespread.

¹ I am extremely grateful to Julian Jaynes for discussions from two decades ago that dealt with many of the themes treated herein. I am also grateful to Georges Rey whose work sparked this version of my thoughts on matters of consciousness, to John Schweitzer for discussions of various pain phenomena, to Carl Hempel for his views on just what it would take to explain a phenomenon like consciousness, and to Hwei-Ying (Tony) Cheng for his views on various problematic aspects of Dennett’s theory. I am also grateful for the comments of two anonymous reviewers whose constructive suggestions motivated useful revisions. Needless to say they are in no way responsible for the use to which I have put their ideas. Portions of a previous version of this manuscript were presented at “The Third Conference on Experience and Truth,” hosted by Soochow University, November 24-25, 2006.

² In some cases though it may have reflected less denial than a fear of the potentially dangerous side-effects of analgesics.

The intuitions of many medical practitioners, and of others concerned with medical issues—the intuitions that we are not born conscious and that language ability is essential (or, more vaguely, of central importance) to conscious experiences—are intuitions that are shared by many who have sought to develop theories of consciousness. Leiber (1991: 151) has expressed this intuition thus: “What does seem common and central to consciousness is the ability to carry on a monologue or dialogue about oneself and others in the intentional idioms of a natural language, to be able to give life narratives...” Some neuroscientists have even developed theories compatible with this intuition, Arbib (2001), Gazzaniga (1988), Macphail (2000), Rolls (1997), and Weiskrantz (1997) being among the most prominent of this group, though each develops the idea with a distinctive slant.

Since all agree that language is an evolved feature, these are all examples of what Velmans (2000: 274-6) has called “discontinuity theory”: they argue that consciousness emerged at some point during biological or cultural evolution.³ Furthermore, all follow what Guzeldere (1997: 27-30 and 42-6) refers to as an “integrationist” (as opposed to a “segregationist”) intuition. In other words, some accounts of consciousness emphasize what it does; this is the “causal characterization.” Other accounts emphasize how it seems; this is the “phenomenal characterization.” Segregationists tend to treat the two as mutually exclusive; integrationists hold that “what consciousness does,

³ An extremely clear, uncompromising statement of such a position is found in Pico (2002: 255): “The human prefrontal cortex . . . is the only place in the biophysical world where thought is produced and propagated in the consciousness frame of reference.” Chalmers (1996), on the other hand, advocates a search for fundamental principles, principles analogous to the fundamental laws of nature, principles that connect physical properties to consciousness. His view is one version of continuity. On this view, not only are humans not the only creatures that are conscious, even thermostats can be said to be conscious. An alternative version of continuity is advanced by McGinn (1995) who believes that the brain in achieving consciousness draws upon aspects of nature that characterized nature prior to the big-bang.

qua consciousness, cannot be characterized in the absence of how consciousness seems, but more importantly, that how consciousness seems cannot be conceptualized in the absence of what consciousness does..." (Guzeldere 1997: 11). Integrationists aspire to forge a unified account of conscious experience.⁴

Because consciousness and its cognates are often applied to distinct phenomena⁵, one must make clear that the call for a unified account is one which, among other things, desires to explain what is often called phenomenal consciousness (e.g. Carruthers 2000). It is often said of states that possess the property of phenomenal consciousness that it is *like something* to have them (Farrell 1950, Sprigge 1971: 167-168, and Nagel 1991). Approximating synonyms, notational variants, of "what it is like to be" are numerous; included among these synonyms are: "raw feels," "qualia," "experience," "phenomenal qualities," and "subjective feel." Many hold that the only more precise definitional option is ostensive, that it can only be pointed to in experience, as when you explain "sting" by saying how your hands feel when you hit a fastball off the handle or the end-of-the-bat on a cold day. The "stabbing" pains of a peptic ulcer, the "throbbing" pains of a headache, or the "crushing" pains of a heart attack could all be pointed to in experience in the same way. For purposes of this essay, when referring to consciousness, unless otherwise specified, it is this sense of consciousness that is intended, as will be made clear, since most of the featured examples are drawn from pain experiences.⁶

⁴ Some, like Humphrey (2000a: 11), while advocating a unified account, adopt a more moderate position that calls for meddling "with both sides of the equation to bring them into line." For a yet more recent version of this approach see Humphrey 2006.

⁵ The ambiguity is at times so great that "consciousness" has variously been called a "hybrid," a "non-natural," and a "mongrel" concept (Block 1995, Churchland 1986: 321-2, and Wilkes 1988: 168-197).

⁶Given the current stage of understanding, perhaps no more formal and non-question-begging definition can be found. But Carruthers (2000: 14) has formulated one that is at least as good as any other: "events that we can recognize in ourselves,

Perhaps the single most prominent advocate of discontinuity, integration, and the view that language (somehow construed) is essential to conscious experience, including conscious experience of the sort sketched in the preceding paragraph, is Dennett.⁷ For nearly four decades one of his main projects has been the development of a theory of consciousness, a theory applicable both to the sciences and to philosophy. His positive thesis⁸—his attempts to say what it is—I refer to as the Clout Theory of consciousness (CT), to reflect his most recent statements. CT serves as a suitable focus, because not only has it been honed over four decades, it has played a significant role in debates among natural scientists, and it has been a flash point for much discussion of consciousness theories in philosophy.

After introducing some of Dennett's main ideas and CT, these ideas will be applied to specific problems, primarily examples drawn from the literature on pain studies. The intent is to check CT for adequacy against what are arguably paradigmatic instances of consciousness.⁹ Judging by its inability to explain various pain phenomena, CT is found to be neither necessary nor sufficient for consciousness. Nevertheless, aspects of CT suggest intriguing lines of research that might be fruitfully pursued.

It can be argued that the painfulness of pain is not a proper example of conscious experience (e.g. Austen 2006), but this is an idiosyn-

non-inferentially, or 'straight off,' in virtue of the ways in which they feel to us, or the ways in which they present themselves to us subjectively."

⁷ His emphasis on language and immersion in a sea of culture is clearly stated in several places, e.g. Dennett 1991: 300-1, 1996: 130, and 1998: 327.

⁸ Dennett has also delivered much attention to explaining what consciousness is not (e.g. 1991: 369-411 and 2005: 77-102).

⁹ It may well be the case that findings concerning one form of conscious experience don't necessarily apply to other forms of conscious experience (e.g. Allen 2004: 630-1 and Crane 2001: 131). But even if this is true, it creates no problems for my argument, as my concern is with the adequacy of CT, and theories should at least be able to account for paradigmatic cases of a phenomenon in order to count as adequate.

cratic, highly counter-intuitive position that lacks strong theoretical support. The burden of proof rests with advocates of this position. Nevertheless, one might choose to cast my position in a more cautious, conditional form, such that: *if* pain is a proper example of conscious experience, then CT is an inadequate theory of consciousness.

The argument is developed in the following sequence: CT, in its most recent garb, along with some of Dennett's related ideas, are sketched; the rationale for treating pain as paradigmatic of conscious experience is given; pain examples are introduced to test CT's explanatory adequacy; a possible response that Dennett might make to allegations of CT's inadequacy is considered; and, some aspects of CT that might be worth preserving are identified.

II. CT: Consciousness As Power

Dennett's views on consciousness have undergone some modification since the publication of his first comprehensive¹⁰ presentation, *Consciousness Explained* (1991). At that time he introduced his "multiple-drafts" (MD) model (1991: 101-138); more recently that model has been recast as "fame in the brain," or "cerebral celebrity" (e.g. 1998: 131-9). And, he (2005: 161) now says consciousness is not so much *fame*, "as *influence*—a species of relative 'political' power in the opponent processes that eventuate in ongoing control of the body." Dennett takes this slogan to be broadly representative of the direction of much recent work in the cognitive neurosciences that tries to explain consciousness, work that had precursors, such as the pandemonium models of the 1950s (Dennett 1991: 240-2), work that was clearly articulated by Baars (1988), and work that has been refined and further

¹⁰ Much of *Consciousness Explained* is foreshadowed by *Content and Consciousness* (1969) and parts of *Brainstorms* (1978). Dennett has though clearly rejected some of the ideas presented in those works (1991: 318).

developed by more current investigations (e.g. Dehaene and Naccache 2002, and Dehaene and Changeux 2004).

Concerning this most recent recasting of the idea, Dennett (2005: 137-8; also see 164) writes: “When processes compete for ongoing control of the body, the one with the greatest clout dominates the scene until a process with even greater clout displaces it.” Dennett’s theory might then with good reason be called Clout Theory (CT). Blending his philosophical reflections with the ideas of some cognitive scientists he (2005: 137-8) says “this political difference is achieved by ‘reverberation’ in a ‘sustained amplification loop,’ while the losing competitors soon fade into oblivion, unable to recruit enough specialist attention to achieve *self-sustaining* reverberation.” Dennett (2005: 165) believes that it is this “reverberation,” or “echo-making” power, that people appeal to when motivating claims about the consciousness of self and others; to illustrate such “reverberation” he cites Proust’s description of the way in which almond cookies could arouse vivid childhood memories and emotions. He treats phenomena of this type—i.e. episodic memories—as having the paradigmatic character of reverberation that typifies consciousness.¹¹ Note that such memories are vivid, they integrate multiple sensory modalities, they involve recall of self situated in specific contexts, and they are affectively-laden.

Dennett (2005: 138 and 161) then proceeds to say that the “task of a theory of consciousness” is to explain how it is that some (very few) contents succeed in achieving clout, “with all the ensuing *aftermath*, while most others evaporate into oblivion after doing their modest deeds in the ongoing projects of the brain.” As for why this is the task

¹¹ Concerning an earlier version of his theory of consciousness, the Multiple Drafts model, Dennett (1991: 132) emphasized that “what happened (in consciousness) is simply whatever you *remember* to have happened.” The italics are mine. Consistent with CD, the Multiple Drafts model makes the actual recording in memory “*critical* for consciousness.” Again, the italics are mine. It seems that the main difference in this regard between the early and the more recent version is that now Dennett places more emphasis on a particular type of memory, the episodic. See below for further discussion.

of a theory of consciousness, Dennett holds that what conscious events do is “hang around, monopolizing time ‘in the limelight.’” Dennett’s emphasis on what all conscious events *do*, follows from his emphasis on an integrationist, functional approach. He believes (2005: 17-22) it is “science’s job to find the maximally general, maximally noncommittal—hence minimal—characterization of whatever power or capacity is under consideration.” In other words, Dennett strives to say what consciousness does, all aspects of consciousness, with a bare minimum of theoretical posits, but with maximal explanatory coverage. These goals would seem to oblige him to boldly subject his theory to tests against at least those phenomena that are *prima facie* paradigmatic of consciousness: that is he should welcome a test of the adequacy of his theory in explaining such phenomena as pain, especially given that he himself treats this as an important example of consciousness.

Concerning the expression “limelight,” Dennett hastens to add that there is no literal searchlight.¹² He hopes to explain away this metaphor “by explaining the functional powers of attention-*grabbing* without presupposing a single attention-*giving* source” (Dennett 2005: 138). As part of his attempt to explain away this metaphor, he believes that two questions must be asked: first, how is clout achieved? And, after it has been achieved, then what happens? To postulate some sort of neural activity as necessary and sufficient for consciousness is just the first step; “one must then take on the burden of explaining why *that* activity ensures the political power of the events it involves—and this means taking a hard look at how the relevant differences in competence might be enabled by changes in status in the brain” (Dennett 2005: 138).¹³ He

¹² For detailed exposition of this idea see Dennett 1991: 101-138.

¹³ Dennett (1991: 255) is, for example, critical of Crick’s and Koch’s (1990) early work for this reason. After they postulate a particular form of neural activity as critical, he alleges that they fail to pursue important questions, such as the “tricky path from (presumed) consciousness to behavior, including, especially, introspective reports.” Koch (2004: 97) substitutes what he takes to be a “neuronal equivalent” of this question: What effect does “the activity of a coalition of neurons in the cortex and thalamus and closely

attempts to answer both questions by an appeal to the kind of reverberation that he believes to be typical of episodic memory.¹⁴

One reason why Dennett (e.g. 2005: 141-142) places special emphasis upon the “and then what happens” question is that he denies that consciousness is either an intrinsic property or just a dispositional property;¹⁵ instead, it “requires some actualization of the potential.” He typically elaborates on this point by invoking an analogy: just as potential fame for an individual can be thwarted by suddenly breaking events that prevent the potential from being realized, so too can neural events, with all the dispositional properties ordinarily sufficient for fame, fail to get triggered. If this analogy is cogent, to say that some information can be conscious for a few milliseconds but have none of the typical after effects is “as covertly incoherent” as the idea that a person could be famous for a few moments but have none of the typical after effects. “Real fame is not the *cause* of all the normal aftermath; it *is* the normal aftermath.” He believes the same is true of consciousness: phenomenal consciousness or qualia or what-it-is-like cannot be distinguished from aftereffects of the type that are made possible by, for example, being globally, inter-modally, accessible to reflection, as is the case with

allied structures” have on other parts of the brain? Koch’s postulate is not for necessary and sufficient conditions; rather, he is trying to identify “a *minimal* set of neural events jointly *sufficient* for a specific conscious experience,” against the backdrop of appropriate enabling conditions.

¹⁴ Episodic memory is one form of declarative memory (the other being semantic, e.g. my memory that Jefferson City is the capital of Missouri). According to Tulving (1999: 278) episodic memory seems to be a recently evolved, late developing, past-oriented system, probably unique to humans, that allows for remembering of previous experiences as experienced.” Unlike all other forms of memory, episodic memory necessarily involves recall of specific events situated in a framework of time, space and context. Moreover, it is accompanied by a self-knowing awareness and it has an “affectively-laden” tone.

¹⁵ Carruthers (e.g. 2005: 54) has criticized “actualist” views, such as Dennett’s, by noting that they impose unnecessary burdens on the brain, that they would require “cognitive overload.”

episodic memory. On his view to hypothesize qualia that are neither globally accessible nor available to later reflection is to hypothesize a will-of-the-wisp property. For Dennett, just as there is no fame without the normal after effects, so too there is no consciousness that is isolated within a module or a moment of time.

In his recent works Dennett's clearest characterization of "reverberation" and "aftermath" is the phenomenon of episodic memory. Beyond the characterizations appropriate to this paradigm case though, Dennett is not altogether clear as to just how these concepts should be unpacked. But he (2001: 222-4) does unequivocally endorse the general direction taken by Dehaene's (e.g. Dehaene et al. 2004) version of the global workspace theory, a view that emphasizes the non-modularity of consciousness. On this view, consciousness is regarded as the integration of many different types of non-localized, sensory information (hence the notion of global availability). Many different cells that are widely distributed fire in such a way as to form temporary coalitions, thereby succeeding in motivating behavior. To a first approximation this is a neural realization of Dennett's view that consciousness can obtain only when it "reverberates," when information reverberates across multiple modules, thereby positioning it to wield distinctive influence, to achieve clout.

As for "aftermath," Dennett (2001: 226) also unequivocally endorses the general direction adopted by Jack and Shallice (2001). Concerning the functions that Dennett deems typical of consciousness, Jack and Shallice (2001) argue that the achievement of a "type-C" status is necessary.¹⁶ In experimental contexts these functions can be identified when awareness of certain stimuli is necessary for the initiation of in-

¹⁶ Jack and Shallice (2001: 171-2) define type-C processes as "processes that can only operate effectively on information when normal subjects report awareness of that information." Although their main concerns are with how to operationalize studies of consciousness, they believe that type-C processes share certain information-processing operations that give rise to consciousness.

tentional action. Consistent with Dennett, they (2001: 174 and 184-5) regard the processes involved in the encoding of episodic memory as having type-C status, because these processes allow for later retrieval of a type “in which we have the subjective sense of recollecting” specific perceptual events. Not unlike many others who have studied the functions of consciousness, they speculate that it evolved in order to enhance our ability to cope with non-routine situations. Episodic memory seems to fit well with this view of consciousness functions because it stands ready (it is available to reflection) to remind subjects of relevant autobiographical episodes that can enhance strategy development when confronted by non-routine situations. It is apparently this ability to recall autobiographical episodes that Dennett is thinking of, something that can clearly alter the competitive context for future events. Dennett (2001: 227) proclaims that this capability wields “a hugely heightened influence that not only retrospectively distinguishes it from its competitors but also. . . contributes to the creation of a relatively long-lasting Executive, not a place in the brain but a sort of political coalition that can be seen to be in control over subsequent competitions. . . such differences in aftermath can be striking. . .”

Despite his lack of clarity concerning just what amounts to reverberation and aftermath on a sub-personal level, at least when Dennett describes the personal level he makes it unmistakably clear that episodic memory motivates his view of consciousness. One common example which indicates this clarity of intent appears in contexts wherein he discusses the possibility of animal consciousness. He (2006: 206-207) accuses most people who are willing to attribute consciousness to animals of suffering from “the Beatrix Potter syndrome,” that is an empirically unmotivated willingness to attribute such phenomena as episodic memory to non-humans. In this regard he says that were we to discover that nonhuman animals experience the sort of “echoic Proustian events that we report to each other”—i.e. episodic memories—the claim that consciousness is largely a human trait might stand refuted. But, taking dog recognition of its owner by aroma as an example, since this is explainable by simpler hypotheses, and since even so

much of human recognition doesn't require "Proustian trappings," there is no explanatory need to attribute human-like consciousness to dogs. Nevertheless, these "trappings" (like episodic memory) are important for us, because they can, among other things, help us distinguish among remembering, imagining, and guessing. Assuming that non-humans do not have a robust capacity for mental phenomena like imagining, the capacity for making these distinctions would not matter much to them.

Dennett (2005: 169) hypothesizes that dogs and other nonhuman animals don't need an "echo-chamber" for anything, nor is it a by-product of anything they need: "efficiency and timeliness are the desiderata that dictate short, swift, ballistic trajectories contents."¹⁷ We, on the other hand, got "sidetracked"; we mentally replay events over and over. Although this habit might initially have been "'wasteful' of time and energy, (it) is very likely the source of one of our greatest talents: episodic memory and 'one-shot learning' that is not restricted to special cases."¹⁸ Where nonhuman animal memory depends heavily

¹⁷ Dennett (1998: 347) claims that consciousness requires a certain informational organization which enables reflection, re-representation, and so forth. "It is an organization that is swiftly achieved in one species, ours, and in no other." We differ so greatly from other species that "speculative translations of imagination from our case to" other species "*make no sense.*"

¹⁸ The reference to "one-shot" learning concerns a series of experiments performed by Garfield (Stich 1994: 346-7). To take just one such experiment as an example: rats were first fed flavored food or water, and then subjected to sufficient doses of radiation that they became sick. After just a single trial, rats develop a strong aversion to the food, even if the exposure to radiation is not delivered until as much as twelve hours after eating. It has also been confirmed that the rats became averse to the food, not to other parts of the environment. If two substances are consumed in sequence, novelty is more potent than recency in determining the aversion. The rats behave as though they believe that whatever has the distinctive taste will cause them to become ill; apparently they are acting in accord with an "innate belief (or aversion) forming strategy" (Buss 1999: 27). "Selective association" or "prepared learning"—in this instance between taste and nausea, in other well-studied instances, between sight or sound and pain—has now been confirmed for several other species; in fact, it seems to be a general principle of nature

upon multiple repetitions of external stimuli, much of what we remember “is stuff that has been played and replayed and replayed obsessively in our brains” (Dennett 2005: 170).¹⁹ Because we are not reliant upon multiple types of external stimuli, our reverberations are, in Dennett’s words, “self-sustaining.” This ability to “relive or rekindle contentful events is the most important feature of consciousness—indeed, as close to a defining feature of consciousness as we will ever find. . .”(Dennett 2005: 171 and 1991: 132). On Dennett’s view then, there are no clearer indicators of consciousness than the characteristic features of episodic memory.

In addition to this empirical hypothesis which highlights the significance of episodic memory in consciousness, he puts forth a second empirical hypothesis (2005: 171-2): the echoic capacity manifest in episodic memory that typifies consciousness results from habits of self-stimulation that we learn from human culture. For close to two decades Dennett (1991: 200-282, 2005: 168, 171-172, and 2006: 196-208) has been arguing that consciousness is a primarily human trait that derives largely from “habits of self-stimulation” which we acquire from “a culturally borne ‘meme machine,’” a machine that is “Joycean.”²⁰ “Habits of self-stimulation” (1991: 194-9) include such things as asking oneself questions or drawing pictures for oneself. By so doing we can create “virtual wires” that enable information to be communicated between parts of the brain where the pre-existing neural connections are suboptimal. The term “meme” was coined by Dawkins (1976: 203-215), to serve in a role roughly analogous to “gene,” and to indicate a unit of cultural information—anything from the belief in god, to the wheel, to the alphabet, and so on.²¹ One distinguishing feature of

(Konner 2002: 25-8).

¹⁹ Dennett (2005: 170-1) though is quick to point out that the repetition that “*elevates* a content to the clout of conscious recallability is largely not conscious. Indeed, there is no need for a sharp dividing line between conscious and unconscious repetitions.”

²⁰ For the clearest articulation of his hypothesis see Dennett 1991: 210.

²¹ For a detailed discussion of recent views concerning memes see, Blackmore 1999. It

this way of talking about cultural information is that “memes” needn’t be advantageous to their havens, human minds; they need only be advantageous to themselves.²² And, “Joycean” indicates that consciousness is a virtual serial machine, one that is acquired by the brain’s parallel architecture when we learn language (i.e. that which enables us to represent and process information in structured, rule-governed sequences). In short, Dennett argues that consciousness emerges when brains are colonized by memes acquired largely through natural language. On his account consciousness began to emerge when public verbalization became internalized, thereby enabling greatly improved communication among different parts of the brain, even when one was silent, in virtue of having created the aforementioned virtual wires.²³ Here then we have the origins of the “echo chamber” that Dennett mentions so often in his writings. To cast this in excessively literal form, ideas can bounce around in the brain unrestrained by modules. Information from multiple modules become available for reflection.

Dennett and all who have reflected upon his work (e.g. Chalmers 1996) are aware that it may at least appear that he is leaving something out, that echoic-Proustian events, language-dependent virtual machines, self-stimulation, reflexivity, or global accessibility might not be able to explain phenomenal consciousness. On Dennett’s (2005: 142-4; also see 79 and 165) account though, since it is hard to find evidence for phenomenality without (for example) reflexivity, since phenomenality

is perhaps worthy of note that Blackmore (1999: 238) does not endorse Dennett’s theory of the relationship between memes and phenomenal consciousness.

²² As Stanovich (2004: 175-6) has phrased the idea: “the fundamental insight triggered by memetic studies is that a belief may spread without necessarily being true or helping the human being who holds the belief in anyway. As independent replicators, memes don’t necessarily help the person in whom they nest; instead, they exist because “they have displayed the best fecundity, longevity, and copying fidelity.”

²³ Concerning these aspects of Dennett’s theory Carruthers has provided useful exegesis. In particular see, Carruthers 2000: 278-288 and Botterill and Carruthers 1999: 266-270. Paul Churchland (1995: 264-271) has also provided some useful commentary.

is beset by definitional problems, and since his hypothesis is simpler, his should be preferred over those of his competitors.²⁴ He believes that all phenomena relevant to an explanation of consciousness can be treated at the level of beliefs or intentionality. Episodic memory, language-based virtual machines, and so on, can all be handled at the intentional level. To phrase this in Dennett's (1987) terms, he is willing to adopt an intentional stance, but unwilling to adopt a phenomenal stance.²⁵

This position—that when collecting data we need go no further than beliefs about phenomenal experiences—motivates his defense of a 3rd person approach to the study of consciousness (e.g. Dennett 2005: 44-5). We needn't consider the phenomenal experiences themselves. Elsewhere Dennett argues (1991: 362-8) that “seeing is believing.” On his account (Dennett 1991: 334-5; also see, Elton 2003: 151-5), it seems to be the case that phenomenal experience “is simply a matter of coming to acquire a variety of intentional states.” Adequate explanation of the relevant beliefs (or other intentional states) then just is adequate explanation of phenomenality.

Dennett classifies his (1991: 132)²⁶ model of consciousness as a kind of “first-person operationalism, for it denies the possibility in principle of consciousness of a stimulus in the absence of the subject's belief in that consciousness.” He (1991: 133-4) wants to resist distin-

²⁴ Commenting specifically upon Block's (1995) well-known distinction between “access” and “phenomenal” consciousness, Dennett (2005: 165) observes, “once you shear off all implications about “access, you are left with something apparently indistinguishable from phenomenal *unconsciousness*.” For his more detailed criticisms of phenomenality and its cognates see Dennett 2005: 78-129, as well as 1991: 369-411.

²⁵ Dennett is only inclined to ascribe intentional states—e.g. beliefs, desires, and intentions—to persons. Others (e.g. Robbins and Jack 2006) are inclined to go beyond the intentional stance and ascribe both intentional states and phenomenal states.

²⁶ For detailed, critical commentary see Rosenthal (2005: 229-256)

guishing between a state or event “seeming-a-certain-way” and a subsequent “judging-that-it-is-that-way.” It is senseless to speak of phenomenal consciousness in the absence of beliefs about phenomenal consciousness. With reference to the Kohler’s color phi phenomenon,²⁷ Dennett denies that there is an event, say a “seeming-to-be-intervening-motion,” that serves as the basis for judgment. To postulate a “real seeming” in addition to the act of judging or formulating a belief expressed in a subject’s report is to multiply entities beyond necessity and possibility. Dennett (1991: 132) says of “real seemings” that they are “metaphysically dubious”: dubious because it is odd to say of something that it “objectively seems” a certain way, even if it doesn’t seem that way. He (1991: 131) suggests that people cling to this way of talking as, in part, motivated by a desire “to preserve the reality/appearance distinction for consciousness.” In other words, we form beliefs about how things seem, but there is no “seeming,” no actual or objective seeming, that stands independent of our beliefs.

Among discontinuity theorists, Dennett adopts an extreme position, for he (1991: 24) claims that consciousness is like love and money: that is, it depends “to a surprising extent on its associated concepts...some of its most significant features are borne along on the culture, not simply inherent...in the physical structure of its instances.” A stark statement of this position appears in an essay in which he (Dennett 1998: 128) expresses broad sympathy for what he takes to be Julian Jaynes’s position:²⁸ “you can’t have consciousness until you have the concept of consciousness.” He (1998: 130) observes that if Jaynes is correct, con-

²⁷ Two differently colored lights nearby one another flash on and off in such a way that observers have the illusion of a single dot physically moving between the locations; what’s more, the light appears to change color about halfway through its trajectory (Dennett 1991: 114). To view this illusion, check: <http://www.mdx.ac.uk/www/ai/rss/phi/ColourPhi.html>. Dennett (1991: 143) also describes a similar tactile illusion (cf. Gray 2004: 154).

²⁸ In personal communication Jaynes, without equivocation, emphasized that this is indeed his position.

consciousness is almost certainly the result of a software revolution that has to come after language. To this he adds: “something like what he proposes has to be right.”

Dennett does not deny that there is something about our brains which predisposes us for learning the concept of consciousness (e.g. the capacity to learn language), which makes it possible for us to learn but not, say, for chimpanzees to learn. What he denies is that we acquire consciousness in the absence of the proper environment. “Proper” here refers to an environment that has the right kind of memes or concepts, including those which enable the implementation of a virtual machine, one that can enable the sort of reverberation described by Dehaene, an integration of multiple modalities that can compete for influence, as well as one that can achieve type-C status and thereby stand positioned to wield long-term effects. To achieve the reverberation and aftermath that typify episodic memory which in turn typifies consciousness, we need the right concepts.

An especially vivid depiction of some of the implications of these ideas has been cast by Dennett in the form of a thought experiment concerning victims of blindsight: blindsight is a pathology that results from damage to the visual striate cortex, a pathology that prevents a victim from having conscious visual sensation for portions of his visual field, even though he behaves as though he can see what is presented to that visual field. Because blindseers lack conscious visual experience for a given visual field, they must be prompted to guess. The surprise—given that they are blind—is that they guess accurately, at levels well above chance. Dennett (1991: 331-3 and 338) proposes—at least for the sake of a thought experiment—that we train blindseers by optimizing their performance through feedback training, while also training them to respond without being prompted. He contends that if a blindseer came to trust his “guesses” as much as he trusts his actual conscious experiences, actual conscious perception would emerge for the

blindsight portion of his visual field.²⁹ What Dennett is suggesting is that for the case of what have come to be referred to as people with super-blindsight (blindsight victims who regain conscious experience through the sort of training indicated above), Joycean, language-based virtual wires, through their capacity to enable and promote self-stimulation, have succeeded in compensating for the damage done to the visual striate cortex. This would in effect be the invention of a new piece of software, one that can replace the software that used to run on the visual striate cortex.

III. Pain as a Paradigm of Consciousness

Though pain analysis has not been the centerpiece of Dennett's investigations into consciousness, it has always been a significant component (e.g. 1978: 190-229, 1991 and 1998, *passim*). A small minority of researchers (e.g. Hardcastle 1997) have warned that pain may not be typical of conscious states, perhaps due to a certain uniqueness in its neurobiological transmission. But most others—including Dennett—have treated it as though it is the least contentious of those mental states that are alleged to be conscious. In this same spirit, Gray (2004: 76) has recently opined: "pain is in many ways the quintessential conscious experience." For this reason, it is a suitable phenomenon against which to evaluate CT.³⁰

On most inventories of mind, pain tends to be treated as the paradigm of conscious experience—much more so than thought, intent, be-

²⁹ So far there is not even one clear empirical case that can be used to lend support to Dennett's hypothesis (e.g. Weiskrantz 1997: 66). But the total number of cases examined carefully, and trained rigorously, is small.

³⁰ For the same reasons as those given below, other transitive bodily sensations (e.g. itches and tingles) would serve just as well. Pain has the great advantage though of having been carefully and systematically studied. Cf. Aydede 2006.

lief, desire, perception, emotions, and even more so than memory (e.g. Guttenplan 2000: 27-31 & 68). Reasons motivating such inventories include: it is characterized by high accessibility (to a subject),³¹ poor observability (by others), and poor expressability (by subject to others). This is not to say that a subject has infallible introspective access, nor is it to say that it is inscrutable to third-person methodologies, and neither is it to say that it is ineffable. It is merely to point out that, as Aydede (2007: 10-2) has phrased it, on the common sense conception of pain: “pains are sensations with essential privacy, subjectivity, self-intimation, and incorrigibility.” The common sense conception is not necessarily accurate, but at least it provides a pre-theoretical starting point. What’s more, this common sense conception is consistent with the definition of pain provided by the International Association for the Study of Pain.³²

Especially when contrasted with reports concerning the standard perceptual modalities (“exteroception”) pain reports seem to have a “near-infallibility.” Although it is commonplace to observe that we can be mistaken about what we perceive (Aydede and Guzeldere 2002: 267-270), it is much harder to establish that a person who takes himself to be in pain is mistaken. Where we do speak of visual or auditory hallucinations, we don’t speak of pain hallucinations. In a word, it is easier to convince us that we misperceive what we see or hear than that we are wrong about being in pain; it is often said that, in this respect, pain is self-intimating. It is sometimes (somewhat tendentiously) claimed that the reason for this difference is that in perception, the object of perception (what is represented) is what most concerns us, because ordinarily the perceptual *experience* is largely transparent. The content of the perception—as opposed to the perceptual experience itself—is the fo-

³¹ As will be made clear below, “high”-accessibility does not imply “perfect”-accessibility. In any case, this should only be treated as one among several characteristic, though not necessary, features of pain.

³² The definition they provide—listed under “Pain Terminology”—can be accessed through their website, <http://www.iasp-pain.org/>.

cus of attention and epistemic access, whereas with pain, it is typically the *experience itself* that is the focus of attention. Although it might be plausibly argued that, at least sometimes, the pain experience represents something—e.g. tissue damage or potential tissue damage—the immediate concern of the person in pain is not what is represented.

Where, say, a vision scientist can do a competent job by attending to how computational processes reconstruct distal scenes making them available to the conceptual system, while ignoring conscious visual experiences, a pain scientist cannot proceed in this way. Pain scientists must regard the pain experience itself as the primary subject matter, especially since conscious pain is relatively independent from tissue damage (Allen 2004: 633).³³ More precisely, there is no “linear relationship” between tissue damage and experienced pain (Vertosick 2000: 232; also see Hardcastle 1999, *passim*). A famous illustration of this point was a study of WWII battlefield injuries carried out by Henry Beecher: he discovered that soldiers with the most horrendous injuries often felt no pain, while soldiers with minor injuries sometimes had severe pain.

Of necessity then, pain studies provide a clear case where science takes 1st person phenomenology seriously (Velmans 2000: 172): from '66 to '98, “the Medline database lists over 148,000 publications of pain and its alleviation” and “pain researchers have developed many ways to measure the subjective experience of pain.” The “strong epistemic foothold” had by subjective reports in the study of pain results from the “near infallibility” commonly attributed to pain reports. In other words, subjective reports play an essential role in the scientific study of pain because, among other things, tissue damage correlates only poorly with the experience of pain Unlike perception, for example, it is all but impossible to study pain without taking objec-

³³ To repeat, this and related claims are consistent with the definition of pain provided by the International Association for the Study of Pain. See above.

tive reports seriously.³⁴ It is a far greater epistemic challenge to persuade someone that they are wrong about experiencing pain than to persuade them that they are wrong about seeing what they claim to see, or hearing what they claim to hear, or even remembering what they claim to remember.

This being the case, neuroscientists are forced to “pay more attention to the phenomenological information which seems to be available in introspection; it forces the neuroscientist to focus more on attempts to relate neuroscientific findings and mechanisms at the sub-personal level to what appears to be the case in pain reports at the personal level expressing subjectively accessible information” (Aydede and Guzeldere 2002: 271). Moreover, Price and Aydede (2006) argue convincingly that the use of introspective methods³⁵ here is sound; subjectivity, on this view, is treated as just an epistemological phenomenon that implies no anti-physicalist metaphysics.³⁶ In effect one is studying brain activity and its properties, albeit with distinct methods: introspection allows a form of access to brain activity (or, perhaps somewhat less contentiously, its effects) in a direct³⁷ way, albeit in a way that does not reveal its complex physical properties, which can, in any case, be studied via third-person methodologies.

One might be tempted to put phenomena such as pain aside, at least for the time being, and concentrate on perceptual or other studies of consciousness. But, as has been argued in this section, pain is in

³⁴ Recall the relevant discussions above.

³⁵ They argue the virtues of an experimental paradigm that licenses use of both subject’s and investigator’s introspective reports, the two used in complementary fashion. Similar points are made for the study of other mental phenomena in Jack and Roepstorff 2003.

³⁶ In other words nearly all pain scientists believe that the subjective experience of pain must be realized via a physical medium of some sort. The need to study pain by attending more to subjective reports than to tissue damage does not in any respect imply that pain is not (somehow) dependent upon being realized physically.

³⁷ “Direct” here is to be understood as indicating that the subject who experiences pain is at least not aware of making any inferences.

some respects a better example of conscious experience than is perception; along with certain other bodily sensations, it might even be the least contentious example of conscious experience. Moreover, the scientific studies of pain—unlike the scientific studies of perception—have long had to take subjective reports seriously. Consequently, pain scientists have had to develop systematic methodologies for collecting and analyzing the subjective reports. And there is an additional reason for not postponing careful and close examination of pain phenomena: unlike perception, pain does not present a neutral account of the world; rather, it provides a reason for action. As Proust once wrote, “to knowledge we make promises only; pain we obey.”³⁸ As Crane (2001: 87: cf. Lockwood 1989: 19-20) puts it, pains can force themselves upon us. Unlike most other bodily sensations, pain’s “ethical relevance” and “clinical urgency” are distinctive (Macphail 1998: 4 and 199; also, Aydede and Guzeldere 2002). Success in explaining many natural phenomena is unlikely to change our lives substantially. But success in explaining pain stands to change our lives in many ways. Pain or its absence can make the difference between a life well-lived and one poorly lived. In a word, pain seems not only to be one of the least contentious examples of consciousness, it also bears on our lives directly, clinically and ethically. For these reasons any serious candidate for a theory of consciousness should be assessed in terms of its adequacy in explaining pain phenomena.

IV. CT Does Not Provide an Adequate Explanation of Pain

Others, including some (e.g. Churchland 2002, Elton 2003, Rosenthal 2005) who are sympathetic to CT, have expressed the con-

³⁸ This quotation can be found in Macphail 1998: 200.

cern that it might be explanatorily deficient.³⁹ They have, for example, pointed out that certain quotidian states seem to have great influence over cerebral functioning and behavior, without being conscious.⁴⁰ But these concerns have not yet received systematic treatment.⁴¹ Perhaps this is due to a shift in focus that occurred as Dennett's theory developed: where he initially paid close attention to pain (1978), his later work which expresses his more mature theory touches on pain just tangentially. This shift might have allowed Dennett to cast CT in a better light, shielding it, to some extent, from some warranted criticism.

The first, and likely the least surprising, concern is that *clout—understood as success in competition for control of the body that is characterized by reverberation and aftermath—does not seem sufficient for conscious experience.*⁴² Dennett's own, frequently used examples (1991: 61, 1996: 13, and 1998: 351)—e.g. that we often adjust our posture to relieve pressure on certain joints to relieve pain,

³⁹ The concern here is unrelated to explanatory gap worries (e.g. Levine 2001). I believe that “gap” worries, rather like “hard problem” worries, are excessively motivated by the desire to “feel” that one understands. As Hempel (1965: 256-8) once argued, the desire to feel that we “understand” is just to confuse “empathetic familiarity” with theory-based cognitive understanding.

⁴⁰ Rosenthal (2005: 130) notes that “cerebral broadcasting corresponds more to Freud's notion of the preconscious than to any intuitive notion of a mental state's being actually conscious.”

⁴¹ Brook (2002: 57-60) though does identify pain and suffering as especially challenging cases for CT.

⁴² Discussion in this section that pertains to sufficient and necessary conditions is limited to conditions that should, according to CT, bear direct relevance to consciousness. It is not intended to deny or disregard the fact that other, background conditions must be in place in order for consciousness to occur. The reticular formation, for example, is also necessary for consciousness, for it activates the rest of the brain. It is roughly analogous to a computer's power supply: although the power supply is essential for the running of a computer, it is not involved in information processing. Likewise, the reticular formation activates the brain but is not involved in the generation of consciousness (Rose 2007: 201-202).

and that we do this while wholly unaware⁴³—can serve as counter-examples to CT. Ironically, despite being among the least contentious examples of consciousness, pain seems also to occur non-consciously. Even though we have prima facie evidence that it has won the competition with other processes for ongoing control of the body—it motivates us to change positions in predictable ways—it can fail to become conscious.

Even though pain is typically regarded as being highly accessible to the subject and pain reports tend to be regarded as nearly infallible, a surprisingly large number of consciousness investigators, representing varied theoretical perspectives and areas of specialization, countenance talk of “unconscious,” “unnoticed,” “unexperienced,” “unfelt,” or “sub-clinical” pains, even pains that wake people up.⁴⁴ Although it is often said that this is a counter-intuitive way of thinking about pain, Lycan (2003: 9) observes that “ordinary people quite frequently speak of pains that go unfelt, without any sense of contradiction.” To convince skeptics, Lycan has even begun to compile examples of unfelt pain from the popular press.⁴⁵

⁴³ Cf. Vertosick 2000: 152 and 175.

⁴⁴ See: Carruthers 2005: 185-186, Chalmers 1996: 17, Dartnall 2001, Guttenplan 2000: 28, Jaynes 1985, Lycan 2003, Rosenthal 2005: 154-5, Searle 1992: 164-7, Tye 1995: 115 and 2000: 182, Vertosick 2000: 152 and 175, and Wilkes 1993: 186. Reasons vary, but all are struck by the capacity of creatures to withdraw from noxious stimuli, vocalize in certain ways, and release adrenalin into the blood, seemingly without the conscious experience of pain. Most would likely agree with Konner (2002: 205) when he writes: “Nociception. . .is the first function of nervous systems and the flinch from a noxious stimulus is within the ken of creatures with one nerve cell. This reflex. . .leads the organism to withdraw, to flee, or. . .to flinch and freeze. . .”

⁴⁵ For example (Lycan 2003: 13, Fn. 15: “From time to time, she winced slightly as she moved in front of the jury to the easel and back to the stool. For the most part, she was so involved in her intricately constructed argument that she didn’t feel the pain.” Needless to say, not everyone is convinced that the notion of unfelt pain is coherent (e.g. Macphail 1998: 199).

To repeat, even on Dennett's account, nocturnal pains can achieve clout, at least in the sense that they regularly succeed in motivating posture adjustments so as to relieve joint pain. But they aren't remembered; they aren't reportable; and, there is no other indication that they achieve consciousness. In other words, merely achieving clout is insufficient for achieving consciousness—even when the relevant sensation is pain.

For those who find the concept of “unfelt pain” to be incoherent and who are not persuaded by the folk psychological examples compiled by Lycan, it is perhaps useful to note that were we awake, the relevant sleep contortions would surely cause us pain (Dennett 1991: 61). Moreover, people who are congenitally insensitive to pain don't make the adjustments that the rest of us make.⁴⁶ And the congenitally insensitive suffer from a variety of physical impairments that are caused precisely because they do not have nocturnal pains. Although the concept “unfelt pain” might appear to be incoherent, still, inference to the best explanation—as when trying to explain health problems encountered by those congenitally insensitive to pain—provides sufficient justification for provisionally crediting it with an explanatory role.⁴⁷

⁴⁶ It is worth pointing out that, for those who, like Dennett, believe that language ability is essential for conscious experience (see discussion above), Wall's (1999: 154) observation that significant long-term effects can be seen in newborn boys who were circumcised without anesthesia, also suggests that clout is insufficient for consciousness. Here we seem to have significant aftermath but without one of the preconditions for consciousness.

⁴⁷ A separate line of reasoning can help support the claim that some pains are unfelt: Rosenthal (2005: 153) observes that pains often continue for a long time, even though they are not strong enough to intrude on consciousness throughout the entirety of their duration. One could, alternatively, describe this phenomenon as the pain being sometimes present in consciousness, sometimes not. But folk psychology admits of both characterizations, as do theoretical considerations. To insist that only conscious pain is pain is question-begging.

Dennett would no doubt dispute the interpretation that I provide. But to recall his preferred analogy, at least it can be said that a potential is actualized—purposeful movement occurs, movement that contrasts sharply with the normally dominant immobile state, movement that seems to be made possible by the inter-modular availability of pain sensations (by reverberation) to motor areas of the brain. To this he might reply that the after effects are too brief, but Dennett himself is never sufficiently clear as to how long is long enough. He only says that a few milliseconds are insufficient.⁴⁸ Moreover, just how significant “aftermath” is for our understanding of consciousness is a highly contentious issue, concerning which more will be said below.

Before leaving behind the worry that clout seems to be insufficient for consciousness, it should also be noted that other types of clinical data, data unrelated to pain experience, appear to aggravate this worry. For example, epileptic fugues (e.g. Penfield 1975: 38-9 and Damasio 1999: 97) and other forms of global automatism (e.g. Levy and Bayne 2005: 3-4)—e.g. somnambulism and temporal or frontal lobe seizures—are states in which rather complex behaviors are performed,⁴⁹ even though the patients don’t seem to be consciously aware during the

⁴⁸ But Dennett (2005: 133-4) also says that the length of duration is not important; what matters is that information be made globally available. The critical issue would then seem to be whether nocturnal adjustments require global availability. Concerning this issue, for Dennett to defend his position, he would both have to further explicate “global availability” and show that, just as a fact of the matter, nocturnal adjustments fail to satisfy the minimal requirements. I contend that this would be difficult for Dennett to do because dreams (arguably another paradigm of conscious experience) don’t prompt movement, while nocturnal pains do. He would need to show, at the very least, why movement is irrelevant.

⁴⁹ Penfield (1975: 39-40) describes a patient who could play the piano and another who could walk and “thread his way through busy streets on his way home.” He does though add that “new decisions” can’t be made. Damasio (1999: 997) also cites cases of patients wandering around the streets without coming to any harm. Though these episodes are typically brief, in rare instances—epileptic fugues—they may continue for prolonged periods of time.

episodes and are amnesic for what transpired afterward.⁵⁰ Especially striking in this regard are some cases of somnambulism (see Seager 1999: 33-5 and Levy 2007: 5-6): these cases seem to involve extremely complex, atypical, well-planned actions, even though we have ample reason to believe that somnambulists are non-conscious (e.g. their brainwaves are not the brainwaves of dream sleep). At the very least examples of this type should motivate Dennett to modify his position concerning control of the body and inter-modular reverberation. Actions of this type require extensive inter-modular activity and—just as with nocturnal adjustments—they indicate success over the default states typical of sleep.⁵¹

To be fair to Dennett though, excessive emphasis should not be placed upon the insufficiency worry. Clearly he does recognize other contributing factors. A second, more troubling, worry concerning CT is that *clout doesn't even seem necessary for consciousness*. While instances of this sort seem less common, they can be found, and even here some of Dennett's (e.g. 1978: 209-211) own examples can be employed. Suppose, for example, a patient is administered a paralytic and an amnesic—in place of an anesthetic—prior to undergoing surgery.⁵² On Dennett's account, “of course *during* the operation they would

⁵⁰ If clout were sufficient for consciousness, the cases of obsessive-compulsive behavior in non-humans (e.g. Overall and Dunham 2002) would show that consciousness is widespread throughout the animal kingdom, something Dennett denies.

⁵¹ Just how such complex somnambulisms can be performed unconsciously remains an empirically unresolved issue. Seager (1999: 34-35) provides some helpful discussion in this regard and points out that despite their remarkable abilities, somnambulists do differ from conscious agents in certain distinctive ways, e.g. impaired responsiveness to speech.

⁵² A derivative of curare, like atracurium might be used for its paralytic effects, and an anxiolytic (anxiety-relieving agent), like clonidine, might be used for its amnesic effects. At one time, especially in obstetrics, scopolamine hydrobromide was used for its amnesic effects, but this practice has been discontinued due to dangerous side-effects. Also see, Vertosick 2000: 215-6 and Guzeldere 1997: 1.

know but would be unable to tell us.”⁵³ Here we seem to have evidence of conscious experience, but no clout.⁵⁴

Unlike the somewhat strained examples sometimes used by Block (1995) when invoking his access-phenomenal distinction, here we have good independent grounds for claiming that the patient has undergone a conscious experience, despite having impaired access. Good empirical evidence of various sorts can be used to establish that one drug is a paralytic, but not an anesthetic. Empirical evidence can similarly be adduced to show that the other drug is an amnestic, but not an anesthetic. Furthermore, we have excellent grounds on which to claim that surgical cutting is painful—of the conscious sort. Those processes that would ordinarily succeed in the competition for ongoing control of the body are effectively arrested. Consciousness without clout—pain without power—obtains.

One might wish to claim on Dennett’s behalf that some form of clout obtains during the surgery, at least for the time during which the patient has the feeling of not-being-anesthetized. But such a claim does not seem compatible with Dennett’s (2005: 161) position that what matters is success in the competition for “ongoing control of the body.” Here we seem to have a clear loser in the competition for control of the body. At the very least there is a tension between the phenomenon in question and Dennett’s description of that which is central to conscious experience. Even were we to choose to yield on the point concerning “control of the body,” perhaps allowing that being in control of one’s thoughts—that restricted sense of reverberation—is what matters most,⁵⁵ still we would be left wondering what to make of Dennett’s

⁵³ Actual cases of “anesthetic awareness” do occur, though the modern incidence seems to be quite low, approximately 0.2% (Kihlstrom and Cork 2007).

⁵⁴ Cases of akinetic mutism might provide yet another challenge to CT, for the patients seem to be conscious—at least they have distinct sleep-waking cycles, and when they are awake their eyes are wide-open—but they are mute, immobile, utterly unresponsive to stimuli.

⁵⁵ To yield so much though to one with the strong behavioristic inclinations of someone

emphasis on aftermath. For here there seems to be none. To once again invoke Dennett's analogy: here we seem to have a good case of potential fame being thwarted, and on Dennett's view when the normal aftermath fails to obtain, so too does consciousness. At the very least, if there is some significant aftermath, it is nothing at all like the aftermath of episodic memory. And this very fact should lead us to be dubious about Dennett's emphasis on memory and on his adoption of episodic memory as a paradigm.

A third worry pertaining to CT is that *consciousness can be disempowered, such that there is no reverberation or aftermath*. Here the problem is that pain is experienced and reportable, but patient doesn't care. Accordingly, it "fails to achieve self-sustaining reverberation" typical of episodic memories. In Caruthers's words (2000: 206), the patient "floats above" the pains. Subjects unhesitatingly identify the sensations as pain sensations, but they show none of the bodily, emotional, or behavioral signs usually associated with, in Dennett's words, the "awfulness," or the hurt, of pain. These pains don't compete for control of the body in the way that Dennett's theory seems to imply, in part because they are stripped of the affect typically associated with pains and episodic memories. Moreover, they aren't self-sustaining precisely because the patient doesn't care.

In fact a host of varied phenomena can cause the sensory-discriminative aspects of pain to be thus dissociated from its affective-motivational aspects (Aydede and Guzeldere 2002: 272-5, Aydede 2005: 18-26, Hardcastle 1999: 103-7 and 2001: 298-303, and Vertosick 2000: 214-5), including cingulotomies, the effects of hypnotic suggestion, use of nitrous oxide, and the ingestion of morphine.⁵⁶

like Dennett would be to yield far too much.

⁵⁶ Aydede (2005: 24) observes though that pain asymbolia might be the only genuine form of dissociation, for these patients don't even react to momentary pains (e.g. pin-pricks, cuts, or burns), whereas cingulotomy and morphine patients do exhibit normal affective reactions to momentary stimuli. But cingulotomy and morphine patients do

And, in at least one instance (Aydede and Guzeldere 2002: 275), the typical dissociation was reversed, such that the patient felt the unpleasantness but couldn't identify the experience as pain. The sensory-discriminative system is subserved by a lateral pathway that terminates in the somatosensory cortical areas; it is thereby able to distinguish among the various properties of noxious stimuli, such as location, intensity, and quality (e.g. stabbing, burning, pricking, etc.). The affective-motivational system is subserved by a medial pathway which, due to its connections to insular and cingulate cortices and to limbic structures, precipitates affective responses to nociception (e.g. the hurt, urge for cessation, and interruption of attention). Although the two systems are functionally dissociable and appear to be anatomically distinct, they do overlap greatly.

At least for the case of pain asymbolia,⁵⁷ it seems that we have an instance of consciousness, one that can both be reported and remembered, but one that seems stripped of the clout typically associated with such phenomena. Here the sensory-discriminative aspects of pain are consciously experienced, but they seem to have none of the significant "aftermath" that is required by CT. Once again, recall that according to Dennett's analogy: "Real fame is not the *cause* of all the normal aftermath; it *is* the normal aftermath." Pain asymbolia seems to be a case in which, although it can be reported and remembered, "the normal aftermath is missing." By having been severed from its affective-motivational dimension, it seems to achieve precisely the kind of fame that CT wants to deny: though it seems undeniably conscious, it has been stripped of that dimension which would allow it to reverberate in a normal fashion. It seems fully prepared to follow the path of

exhibit dissociation for chronic pains.

⁵⁷ Again, this is the least contentious example of such phenomena. But, as the text indicates, other, similar phenomena are numerous.

non-conscious events—“evaporate into oblivion.” It lacks the normal sequelae.⁵⁸

One might wish to claim that the “awfulness” of pain can be experienced via its sensory-discriminative aspects, but this claim is unsupported by phenomenological reports. Alternatively, one might wish to attempt a reassessment of just what counts as “*normal* aftermath.” But the burden would seem to rest with those who might wish to tinker with the proper explication of “normal” in this context, and the risks of slipping into mere ad hoc justification would be great. At minimum “normal” would have to be explicated in such a way that it is not compatible with what typically counts as normal for either pain or episodic memory.

There is yet a fourth worry pertaining to CT: *the methodology seems to exclude relevant phenomena*. According to Dennett’s approach, “heterophenomenology,”⁵⁹ the “primary *interpreted* data, the pretheoretical data, the quod erat explicatum” should not go beyond beliefs about conscious experiences (2005: 44-5). “Conscious experiences themselves” should not be treated as primary data. Considering the relation between (a) “conscious experiences themselves” and (b) “beliefs about these experiences,” he observes that if (a) outruns (b), those experiences are just as inaccessible to the first-person observer as they are to the third-person observer. Hence, a first-person approach provides no more usable data than does heterophenomenology. And, if (b) outruns (a), then it is the beliefs about non-existent experiences that need to be explained. Strict adherence to heterophenomenology, hold-

⁵⁸ Similar examples are common in the cognitive neuroscience literature. To cite just one other (Baddeley 2004: 28-9): American football players who have been concussed during a game are typically able to remember the code name of the play in which they were involved just prior to getting hit. But 20 to 30 minutes later they drew a blank. Apparently the concussed state prevents memory traces from consolidating. Memory and reportability are intact, albeit ever-so briefly; this seems to be just the sort of Andy Warhol-type fame that Dennett is anxious to deny.

⁵⁹ For detailed explanation see Dennett 1991: 66-98 and 2005: 25-56.

ing the line at (b), helps avoid “commitment to spurious data.” In short, whether from a 1st person or a 3rd person perspective, we have no good grounds for postulating any relevant phenomena other than, or more basic than, beliefs. We have no good grounds for postulating conscious experiences that are independent of belief. Accordingly, when trying to explain consciousness, the explanandum, that which we should be trying to explain, is belief.

Dennett wants to avoid what he regards as confused concepts, like the “objectively subjective” or “real seemings.” And he believes such confusions follow inevitably if one treats “conscious experiences themselves” as that which is to be explained. So he posits only one level of that which cannot be observed, belief. But the “conscious experience themselves” posit might be unavoidable.

Consider the example of phantom pain in limbs that have been amputated (e.g. Ramachandran 1998: 1853-4): some patients begin to feel that the phantom hand is subject to involuntary clenching spasms. When these spasms occur, the nails dig into the palm causing excruciating pain. Ramachandran reports that in some instances the pain can be relieved by creating an illusion: a vertical, saggital mirror is placed on a table in front of the patients. If the patient’s paralyzed phantom is on the left side of the mirror, the real hand is placed “in an exact mirror-symmetrical location on the right side of the mirror.” The reflection of his real hand would then be optically superimposed on the phantom, creating the illusion that the phantom had been resurrected. Some patients are then able to use this visual feedback to unclench the phantom hand and relieve the spasms and the pain.

Now if we deprive ourselves of the posit “conscious experiences themselves” (or, “real seemings”), a posit that is independent of beliefs, then how are we to describe what happens? The phantom pain appears to be a “real seeming,” a real seeming concerning what the patient knows to be illusory, for after all there is no hand there. Not believing that there is a hand there to hurt though doesn’t diminish the phantom pain. Now we add one effective—albeit, still experimental—therapy

for relieving pain: we create yet another illusion. The patient is no fool: he does not believe his phantom to have literally been resurrected, but it “really seems” that way—despite what he believes. And how do we know that it really seems that way—despite the belief that the hand hasn’t been resurrected? We know because the pain is relieved.

Dennett might try to re-describe the situation thus: perhaps we have conflicting beliefs, both the belief that the hand has not been resurrected and the (illusory-perceptual) belief that the hand has been resurrected. But there seems to be no motivation for such a claim beyond the ad hoc. Since CT places greatest emphasis on interpretation—especially of a linguistic sort—Dennett seems obliged to weigh the disbelief in resurrection over the perceptual illusion. And if that is the case, then the therapy should not be effective. Nevertheless, it is effective.

Dennett claims that if “conscious experiences themselves” outrun “beliefs about those experiences,” those experiences are accessible to neither first-person nor third-person observer. But here consciousness is outrunning the belief that hands can’t be resurrected. Nevertheless, knowledge concerning these experiences is accessible to both 1st and 3rd persons. Hence, Dennett’s heterophenomenology appears to be excluding phenomena that actually require explanation. The point is not that Dennett would want to deny that the therapy can be effective. The point is that in order to explain the events he would need, at least, to resort to talk of multiple conflicting beliefs, some of which would be no less spurious than the “conscious experiences themselves” that he is anxious to avoid.⁶⁰ His method is not the innocent safeguard against “spurious data” that he proclaims it to be.

At the very least Dennett owes us a principled account of how conflicting beliefs fit into CT. He might want to give the perceptual and

⁶⁰ Dennett is wont to follow the example of Ryle and Quine and appeal to simplicity as a virtue (be it pragmatic or epistemic). But it is by no means obvious that a maze of contradictory beliefs is simpler than the posit of “conscious experiences themselves.”

the higher-order belief equal-standing; he might even want to claim that the former trumps the latter. But then he would need to explain away the apparent tension between this and his claims that consciousness is almost certainly the result of a software revolution that has to come after language, and that consciousness, like love and money, is dependent upon concepts borne along by culture. No culture of which I am aware fails to recognize perceptual illusions for what they are, nor do those cultures lack the concepts necessary to adjudicate between the veridical high-order judgments and the illusory perceptual ones.

A fifth and final worry pertaining to CT, an extension of the fourth, is that *the presupposed ontology doesn't cohere with what is empirically known about pain*. Dennett (1991: 460) says that pains “are as real as haircuts and dollars and opportunities and persons, and centers of gravity.” His point, once again, is that pain, like the rest of consciousness, is dependent upon having the right concepts (cf. Brook 2002: 58). As for centers of gravity, the example that he explicates most clearly, Dennett (1998: 96-7) is referring to what Reichenbach called “abstracta,” mathematical points that are “definable in terms of physical forces and other properties.” Abstracta can vary: some are useful to scientific calculation, and some, like “Dennett’s lost sock center,” not (cf. Haugeland 1993: 55). But scientifically useful abstracta include things like a center of population, and this is the sort of thing of which it can be said, in Dennett’s (1998: 97) words, that “it jiggles around constantly.”⁶¹ And this simply is not the case with some pains:⁶² the pain distributions of several neurological syndromes are quite characteristic. Though the causes are not always obvious, trigeminal neuralgia (tic doloieux) and occipital neuralgia are two syndromes of just this type. Furthermore, sciatica almost always clearly implicates a particu-

⁶¹ My concern is not metaphysical: abstracta, just so long as they play a significant role in robust explanatory theories or in patterns of causal relevance they are real enough for scientific purposes, and that is real enough for my purposes here (cf. Craver 2007: 226).

⁶² I am extremely grateful to John Schweitzer, Chair of the Department of Pathology, East Tennessee State University, for discussion concerning these points.

lar nerve with the underlying cause usually being a disc (even though many things other than a disc can cause sciatica). And the premonitory pain of shingles (reactivation of the virus varicella zoster), for example, is highly characteristic. Experienced clinicians can recognize this quickly and final determination can be made within a couple of days when the rash emerges with a distribution that matches the pain described. Belief tinkering or re-interpreting won't—at least not in any straightforward way—cause these pains or their underlying causes to “jiggle around constantly.” There is no ground whatsoever for believing that these pains result from language-dependent memes or virtual wires. To paraphrase Proust: they command our attention, interpretation be damned.

V. A Possible Defense of Dennett's Position

Dennett might choose to respond that pain is not a paradigm or privileged example of consciousness, after all we have already allowed that some pains are unconscious.⁶³ His candidate paradigm is clearly episodic memory. But in this regard his choice is highly idiosyncratic, as CT is not just intended to account for elaborations of consciousness (e.g. self-consciousness); it is also intended to account for phenomenal consciousness.⁶⁴ Moreover, well-studied cases like (1) H.M—who suffered almost complete loss of declarative memory due to removal of his medial temporal lobes—like (2) Clive Wearing—who suffers from a severe form of retrograde amnesia caused by a viral brain infec-

⁶³ See previous discussion, especially that which pertains to the lack of nocturnal posture adjustments in those who are congenitally insensitive to pain.

⁶⁴ Dennett's ideas on consciousness closely reflect the views of Julian Jaynes (1976) in many respects, including this one; Jaynes too regarded episodic memory as paradigmatic. In fact, Jaynes (personal communication) believed that Dennett's core ideas were nearly identical to his, sans Jaynes's specific claims concerning the historical emergence of consciousness from a bicameral mind.

tion—and (3) like David—who is unable to learn new facts and to recall many old facts due to damage caused by encephalitis—all suggest that episodic memory isn't necessary for conscious experience (Koch 2004: 194-6 and Damasio 1999: 115-121). All three can see, hear and feel without difficulty, and these perceptions appear to be conscious. In Clive Wearing's case, although he experiences only the present, nevertheless, several months after his illness, he did start to fill his diary with entries like: "awake for the first time," "I just woke up for the first time," and "I am really awake and alive." And David comments continuously on the world he experiences: e.g. "Tastes delicious to me; this is my favorite kind."⁶⁵

It is also worth mentioning that episodic memory may fail in yet another way to support CT. Dennett believes language, is critical to the development of consciousness, because it conveys the appropriate memes, because it enables a virtual serial machine, and because it creates the possibility of internalized verbalization and inter-modular communication. But recent evidence suggests that episodic, or at least "episodic-like" memory, is not uncommon in other animals. Clayton and Griffiths (2002),⁶⁶ for example, in a series of experiments using a food-caching paradigm have shown that scrub jays "can episodically recall what was cached, where it was cached, and when this particular caching event occurred." They can also distinguish memories of cach-

⁶⁵ Gray (2004: 205-6) reports on the cases of three people who suffered damage almost wholly confined to the hippocampus when very young (newborn, four, and six years old), who despite losing episodic memory managed to complete school with "scores in the normal range on a variety of tests of information and comprehension." Though it should not be denied out of hand, it is difficult to imagine that they could accomplish these feats unconsciously. But were we to take episodic memory as paradigmatic of consciousness, we would be pressed to claim that their accomplishments were non-conscious, all other evidence notwithstanding.

⁶⁶ The relevant data has been called to Dennett's attention and he has begun to acknowledge it in his writings (Dennett 2006: 207). But he offers no comment concerning this data, or concerning its possible implications for his theoretical positions.

ing from recovering, as well as update information about the status of caches. Scrub jay studies suggest that language is not essential for episodic memory. If this inference is correct, and if the capacity for episodic memory indicates a capacity for consciousness—which is the position that Dennett adopts (e.g. 2005: 172)—then Dennett must allow that language plays no necessary role in the development of consciousness.

Returning to consideration of human cases, Helen Keller's experiences also raise some doubts about the role of language in episodic memory formation. She apparently had "rich episodic memories" from periods of her life (e.g. at four-years-of-age) when "language was completely absent" (Donald 2001: 241). This case too suggests that episodic memory might not be peculiar to language-using creatures; rather, it might just be that previous tests of episodic memory depended upon language for checking episodic recall. Now that alternative methodologies for checking episodic memory are available, the specific nature of the relationship between episodic memory and language can be more adequately explored.

In sum, (a) case studies of people who lack the capacity for episodic memory suggest that it is not paradigmatic for consciousness. Studies of scrub jays and anecdotal information concerning Helen Keller suggest that (b) there is no necessary connection between language and episodic memory. In light of (a) and (b) Dennett is not well-positioned to claim that episodic memory is a better paradigm of consciousness than is pain, nor is he well-positioned to continue to emphasize the role of language—i.e. as the primary means by which the Joycean, virtual serial machine is installed—in his views on either episodic memory or consciousness.

VI. A Proper Place for CT

Despite Dennett's profound constructivist leanings—i.e. his emphasis on interpretation, language, memes, and virtual wires—when he has been pressed to clarify his position (e.g. Rey 1996 and Block 1994), he has tended to qualify it significantly. Rey (1996),⁶⁷ for example, reports that in personal correspondence Dennett claims “that since consciousness is very much a concept-dependent phenomenon (like love and money. . .), if you change your concepts sufficiently, you change the *sort* of consciousness you might be capable of.” To say “very much” and “the sort” is to adopt a moderate position, one that is compatible with the views of many who seek to explain consciousness scientifically.

If we turn our attention away from the pain examples considered above, and toward certain other pain phenomena, it is easy to see why Dennett would be tempted by a constructivist view, and equally easy to see that a moderate version of CT might have a significant role to play. First let us consider certain other pain phenomena: Pain does not correlate well with tissue damage (e.g. Allen 2004: 633); pain confabulations are frequent (e.g. Jaynes 1985: 63); cross-cultural variation in pain experience is commonplace (e.g. Bates, et al. 1997 and Campbell et al. 2008); affective states exert great influence on pain;⁶⁸ it is often difficult to distinguish pains from other sensations (Tye 1995: 114); vibration and anxiety are often experienced as pain in dental patients, “even when the relevant nerves are absent or anesthetized” (Rosenthal

⁶⁷ Lacking access to the published version of this essay, I am here citing Rey's draft manuscript, which he very graciously provided. In the draft manuscript this report of personal correspondence appears on p. 19, Fn. 22.

⁶⁸ Anxiety increases pain, as when one begins to compare present to past injuries (e.g. Tye 1995: 114), and all forms of depression cause increased sensitivity to pain (e.g. Greenfield 2000: 129). Concerning the effects of expectation and uncertainty see, Brown et al. 2008.

2005: 209); social support can exert a positive influence on even acute pains (Eisenberger et al. 2006); placebos can be highly effective (e.g. Evans 2004); placebo effectiveness varies across cultures (Moerman 2000); hopefulness increases pain tolerance (Humphrey 2000b: 11); and, at least for chronic, intractable pain, hypnosis appears more effective than any analgesic (Hardcastle 1999: 180, Wegner 2002: 293, Walsh 1998: 678-9, and Rainville 2008).⁶⁹ Complicating the picture yet more is the existence of “enjoyed pain” (Wall 1999: 16-7 and Hardcastle 1999: 121). Moreover, many descriptions of how people deal with pain reflect the great influence that complex narratives and belief-systems can yield for coping: for example, Wall (1999: 160-1) describes the life of a WWII amputee who was in severe pain for over 50 years, who nonetheless learned to cope, who “managed to weave a life around pain,” overcoming fear, anxiety and depression. All of these might tempt one to adopt a constructivist view of conscious pain, to think of it as like dollars, baseball, or centers of gravity, as Dennett might have it. Most, perhaps all, of these phenomena seem to cohere with the view that “consciousness is very much concept-dependent” and that by changing one’s concepts sufficiently, one can “change the *sort* of consciousness one is capable of.”

While the unqualified, strong version of constructivism manifest in CT has been shown to be explanatorily inadequate, this moderate version of more limited scope, might well contribute to the development of a productive research program. The life of the WWII amputee is especially instructive in this regard: the amputee learned to embed his suffering in the context of a story that endowed it with meaning such that he was able to not be overcome by pain, to live a reasonably normal life. But the specific details concerning just how virtual wires can be cultivated or installed so as to alter the sort of experience that

⁶⁹ In a laboratory study of ischemic and cold-pressor pain, hypnosis was more effective than morphine, valium, aspirin, acupuncture, or placebos. It has, in some instances, even been more effective than any form of anesthesia during lengthy surgeries and dental procedures (Wegner 2002: 293).

one undergoes—be that pain or something else—will need to be worked out carefully, and will likely exhibit many forms, as the cases listed above appear to suggest multiple types of concept modification. The beginnings of work in this area are already ongoing, but the work might proceed more effectively were it to be integrated into a formal research program, a program that could be usefully informed by the constructivist views of Dennett and Jaynes. The weak correlation between tissue damage and experienced pain, the frequency of pain confabulations, the influence of belief on pain discriminations, the many forms of cross-cultural and interpersonal variation, the belief that one is socially supported, the belief in placebos all suggest that a constructive view can contribute significantly to the development of an explanation of pain, perhaps even contribute to a general theory of consciousness.

The effects of hopefulness, affect, and hypnotic susceptibility perhaps do not so obviously lend support to constructivist views. But hope often seems to be nothing more than just the belief that the future will be better than the present (e.g. Breznitz 1999: 629). And affect (other than perhaps some basic emotions like fear) and hypnotic susceptibility⁷⁰ are arguably strongly influenced by the social contexts within which we are raised. So even for these phenomena we have reason to believe that they might lend support to constructive views.

Although I think it clearly the case that CT holds out much more promise as a research program in its weaker, modified form, still I believe it would be premature to completely abandon attention to something like the strong version that Dennett prefers.⁷¹ As to just how far the constructivist element of such a theory could be taken—whether indeed it could come closer a bolder version of CT⁷²—may well de-

⁷⁰ Some evidence suggests that hypnotizability can be enhanced in various ways (Kihlstrom 2007: 446).

⁷¹ Most of the discussion which follows would apply equally to the version advocated by Julian Jaynes.

⁷² Perhaps the limit would be the Jaynes version, the one that Dennett sometimes seems

pend upon the fate of what Bermudez (2005: 287-297) has called the “rewiring hypothesis.” The basic claim is that the cognitive architectures of language-using creatures fundamentally differ from that of non-language-users. This idea has been developed in different ways by different theorists, but many (e.g. Bermudez 2003, Carruthers 2002, and Mithen 1996) have converged on the idea that one of the most distinctive characteristics of language-using creatures is that they are able to integrate information from a variety of domain-specific modules. Language is the medium whereby domain-specific representations can be recoded, so that they might be integrated with one another.⁷³ On this view then, the extent to which our minds can be amodal and domain-general is largely determined by language. Recall that it is, in part, this attention given by various neuroscientists to the integration of the work of distinct modules that earns Dennett’s hearty endorsement because he believes their studies lend empirical support to his theory (2005: 132-6).

This view of language seems highly compatible with CT. If language can “rewire” our cognitive architectures in this way, it can serve as a “virtual wire,” in Dennett’s terms, and enable integration of information from various modules toward the achievement of clout. In effect, such rewiring might enable the kind of self-stimulation and meme transmission that Dennett envisions, and these are presumably essential to constructivist theories like CT which place so much emphasis on interpretation.

to endorse. On this version, children raised to be non-conscious, in the sense of having what Jaynes called a bicameral mind, would be non-conscious in all that they do. Because they would lack the right concepts or the right memes, they would not be conscious. They would not even experience phenomenal consciousness; they would not have qualia of any sort.

⁷³ Much of the evidence for this hypothesis is archaeological, largely circumstantial (e.g. Mithen 1996), but some experimental evidence has been provided by the “speech-shadowing” tests of Schusterman and Spelke (2005).

If this, or some similar version of this idea, has merit, then it might lend support to some of Dennett's more radical claims. Recall Dennett's speculation about blindsight, and the possibility of super blindsight: once the patient learns to conduct the right probes, to interrogate himself in the right way, with enough practice, he could establish a language-based link of such strength that "he would declare, and we would readily accept, that he had become conscious of the stimuli" (Dennett 1991: 337).

So far though there is no empirical evidence to suggest that super blindsight is achievable. Even patients who have undergone years of training, when they are dealing with problems for which they are highly confident of the answer, they still can at best just report a vague "feeling" that the stimulus has been presented (Chong 2001). But the reports are suggestive enough that it would surely be premature to close the book on further testing and inquiry.⁷⁴

It might also be worthwhile to open a similar line of inquiry in pain studies. Although, insofar as we are aware, there is no clearly recognized phenomenon of blindpain⁷⁵ that corresponds to blindsight, hypnosis can apparently be used to induce dissociations of a sort wherein hypnotized subjects to whom analgesia has been suggested report less pain than do controls when their hands are immersed in ice

⁷⁴ Other possibilities for similar inquiry and testing might also be considered. Among these are the Tactile Vision Substitution Systems (TVSS) developed by Bach-Y-Rita (e.g. 2004), systems that enable tactile information to substitute for visual, to such an extent that patients might be able to recover visual consciousness. Of course even should technologies of this sort succeed in recreating specific conscious experiences, whether or not the new "wires" would be constituted along the lines envisioned by Dennett would be a separate issue.

⁷⁵ Unless that is some of the examples of unconscious pain described above would qualify. There are as well other related phenomena that might serve as suitable subjects for exploration of this type, in particular, "deaf hearing," "blindsmell," and "numbsense" (see Weiskrantz 1997: 24).

water (Wegner 2002: 298-300). Nonetheless, a “hidden observer”⁷⁶ can be called upon who reports feeling much more pain. Were it possible to establish that the link that can be weakened or strengthened by hypnosis or by calling upon the “hidden observer” is a virtual link constituted by a linguistic medium that enables inter-modal integration (or segregation), then we could adduce greater support for some of the CT claims.⁷⁷

An equally intriguing line of investigation is suggested by research (e.g. Lieberman and Eisenberg 2005) which indicates that, to a degree, physical and social pain overlap in both computational processes and neural circuitry. In at least one instance (Danziger and Willer 2005) a patient suffering from congenital insensitivity to pain (CIP) experienced the only pain she had ever felt (an episodic, tension-type headache) when 32, three weeks after her brother had died suddenly in a car accident. Authors of the study suggest that bereavement was transcribed into physical pain, in a manner that must have been independent of peripheral mechanisms of nociception, and of course without any previous experience of physical pain. Although no suggestion is made that this headache resulted from linguistic rewiring, the case does raise the possibility of seeking to create conscious experience of pain, gruesome though this may be to contemplate,⁷⁸ through “strengthening” exercises of the sort that Dennett envisions (and that have been pursued on a small scale) with blindsight patients (cf. Vertosick 2000: 186-7). Adapted to cases of CIP, the attempt would be to develop probes that are appropriate to relating conscious experiences

⁷⁶ The subject might be asked whether “a hidden part of you” experiences something other than what hypnotized subject initially reported. Also see Farthing 1992: 385-390 and Hilgard 1994: 36-45.

⁷⁷ In principle, even given current methods, this should be testable. “Speech-shadowing” techniques (Hermer-Vazquez et al. 1999)—wherein speech is played to subjects through a set of headphones—could be incorporated into the hypnotic test to determine whether it interferes with dissociation, or recovery from.

⁷⁸ But far less gruesome when one considers just how difficult life is without pain.

associated with rejection, exclusion, and ostracism to the sorts of tissue damage that would cause pain in those who don't suffer from CIP. Depending of course on just what kind of probes were developed, success might lend some measure of support to Dennett's view.⁷⁹

VII. Conclusion

The strong version of CT is inadequate as an explanation of certain pain phenomena, thereby showing that Dennett's theory is at least incomplete. Not only is clout neither necessary nor sufficient for consciousness, CT's methodology excludes relevant phenomena and Dennett's ontology is not compatible with what is empirically known about pain. Nevertheless, because so many instances of pain do seem responsive to interpretation and open to constructivist explanations, a moderate version of CT might yet be able to play an important explanatory role. Moreover, because some theories of the role of language in cognition comport well with CT, and because there are a small number of intriguing empirical findings that suggest the possibility of rewiring in surprising ways, further exploration of some of Dennett's more radical views is warranted. The idea of clout made possible by conceptual wiring might well play a significant role in the development of a robust

⁷⁹ This would be less like the case of super blindsight and more like an attempt to cultivate synesthesia, the phenomenon wherein events linked to one sensory modality cause experiences in another sensory modality. The question would be whether humans are capable of creating virtual wires that link social to physical pain, whether they can create virtual wires that link one sensory modality to another, in the way that comes naturally to synesthetes. So far though most studies of synesthesia do not support the claim that associative learning plays a significant role (Marks and Odgaard 2005: 218-9). But those studies do not rule out the possibility of associative learning playing a significant role at a very early age (Gray 2004: 136). And there is some evidence (e.g. Meier and Rother 2007) that certain stimuli can contribute to the learning of synesthetic associations.

research program dedicated to discovering an explanation for consciousness.

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無力量的痛

藍亭

國立政治大學研發處

摘要

一些有關意識的理論強調其與語言的關係、其突然冒出的性質、以及其做為原因的地位，其中最著名的是丹奈特（Daniel Dennett）發展了近四十年的理論。根據其最新的版本，意識是一種腦的「力量」。但是考慮疼痛——可說是意識的最佳典範——的情形，可知「力量」對意識而言既非必要亦非充分因素。此外，痛不一定產生丹奈特的「力量理論」（Clout Theory, CT）所預測的後果；痛並不總是適用於丹奈特的方法；痛也不見得與丹奈特提出的本體論相一致。丹奈特或許希望換用場景記憶做為意識的更佳典範，但研究顯示場景記憶並非必要，且若以其為意識的典範，將衍生出解釋 CT 時的新問題。我不擬捨棄 CT，因其對解釋若干痛的現象似有幫助，且因其與某些語言觀點相當符合。我建議保留其中一些妙思，做為指引進一步經驗性研究的假說。最後，我推薦一些具體的經驗案例，也許值得做進一步的研究。

關鍵詞：痛、意識、場景記憶、丹奈特、超級盲視、重鋪設電線假說