Chapter

27 Mental illness and the consciousness thesis

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Introduction

Writing more than seventy years ago the editors of a Carnegie Corporation funded study of mental disorders wrote as follows:

> The nature of mental disorder has clearly called for special concepts, distinctive methods, and a unique training.... [But] the logic of the case has not been clarified by a tenacious tradition of two distinct but related series of events, [viz. the] bodily and mental.
>
> (Bentley & Cowdry, 1934)

If, however, mental events are not distinct, in some ultimate sense, from bodily or neural events, then what happens to the category of mental illness? There arises a definitional problem for the category of mental illness that goes something like this: to explain how mentality has a constitutive or definitional role to play in an illness or disorder (viz. mental illness or disorder), without presupposing that the domain of mental is distinct from the domain of the physical and neurobiological.

In this chapter we briefly outline and defend a solution to the definitional problem. The heart of our solution is something we call the *consciousness thesis* (or 'CT' for short). This is the thesis that mental illness is an illness in and of consciousness.[1] We also explain how CT is compatible with assuming that the brain is the base of mental illness and thus that neuroscience plays a critical, if not exclusive, role in understanding and treating mental illness.

The definitional problem

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM–IV) has eliminated the term "organic mental disorders," under which previous editions had grouped delirium, dementias and other amnestic and cognitive disorders. The authors explain their reasons for this deletion as follows:

> In DSM–III–R these disorders were placed in a section titled "Organic Mental Syndromes and Disorders." The term "organic mental disorder" is no longer used in DSM–IV because it incorrectly implies that "nonorganic" mental disorders do not have a biological basis."
>
> (American Psychiatric Association, 1994, p. 123)

We doubt whether the authors or informed readers of DSM–III–R understood the terminological distinction between "organic" and "nonorganic" to have any such implication. Nevertheless, the rationale for the revision is clear enough. All mental disorders have a biological basis. Therefore, the terms "organic mental disorder" and "nonorganic mental disorder," taken literally, fail to mark any real distinction between types of disorder. No mental disorders have their basis in some "nonorganic" or immaterial substance.

What, however, should happen to the term "mental disorder" itself? Supposing that all medical disorders have a biological basis, what is the point, then, of distinguishing between mental illness and other maladies to which our flesh is heir? Might not an unwary reader read "non-biological" when he sees the word "mental," and think "non-mental" when he sees the word "biological"? What real distinction among disorders do the terms "mental disorder" and "non-mental disorder" pick out?

Here is one hypothesis. Call it the *somatic basis hypothesis*. It goes like this: "Mental disorder" marks off illnesses that have their biological or organic basis in the patient's brain from disorders based in other bodily or somatic organs, such as the heart, liver or digestive system. Note, however, that if the intent is

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to formulate a somatic or neural base hypothesis for mental illness, might it make more sense to replace the terms "mental" with "neurological" and "mental illness" with "brain disease"? This is precisely the semantic revision of mental illness talk recommended by some students of psychopathology.

In his opening editorial in *Archives for Psychology and Nervous Disease*, the journal's founder Wilhelm Griesinger wrote:

> Psychiatry has undergone a transformation in its relation to the rest of medicine. This transformation rests principally on the realization that patients with so-called 'mental illness' are really individuals with illnesses of the nerves and brain.
>
> (Bentall, 2003, p. 150)

Writing more than a century later, Michael Allen Taylor reaffirms this revisionist program in his textbook on clinical neurology.

> Psychiatry and neurology [is] one field. [M]ental illness is not 'mental' at all, but the behavioral disturbance associated with brain dysfunction and disease.
>
> (Taylor, 1999, p. viii)

As advocates of CT we wish to argue against the sort of revisionism endorsed by Griesinger and Taylor. Although we share their conviction that mental disorders have a neurological basis, we believe that such authors unduly restrict the descriptive and explanatory implications of this conviction. The slogan "Mental disorders have a neurological basis," properly understood, fails to entail either that so-called mental disorders are not mental at all, or that mental illness is just a brain disease. There are at least two theoretical possibilities for interpreting the slogan: (1) One (apparently assumed by Griesinger and Taylor) has the effect of making the idea of mental illness a simple verbal contradiction. There is only the base (the brain); it is not open to speak of minds. The category of mental illness is eliminated.[2] (2) The other (the interpretation assumed by us) leaves open the question whether there is a distinctive subset of neurologically based disorders usefully categorized as "mental disorders."

In what follows and in the spirit of (2) above, we try to elucidate the distinction between mental and non-mental medical disorders, as well as to more accurately work out some of the implications of acknowledging that mental disorder has a neurological basis.[3]

Consciousness

We believe that mental disorders form a distinctive subclass of medical disorders or human health maladies. What distinguishes them is that conscious activity or experience plays a distinctive and multidimensional role in mental disorder. This complex role will be described in CT. Consciousness does not perform such a role in other medical disorders.

But, first, before we describe CT, what is consciousness? "Consciousness" has no precise, univocal or generally recognized meaning. We use the term to pick out a range of phenomena.

Let us start with the expression "conscious experiences." What are conscious experiences? These are particular, occurrent episodes in a person's life, such as seeing the setting sun on some specific occasion; realizing that the sun is setting now; being alarmed, or saddened, or elated at the thought that the sun is setting; inferring that it must be 6 pm local time; recalling that one promised earlier to meet Gloria for dinner at 6; deciding to remain on the beach until dark; imagining Gloria's reaction to being stood-up; and so on.

Conscious experiences prototypically involve consciousness in two ways. First, they involve being conscious of something: you somehow apprehend, attend to or represent to yourself some actual or possible situation. This feature of consciousness is what philosophers call its *Intentionality* or *Representationality*. Second, conscious experiences can themselves be objects of consciousness. When you see the sun set, typically, you know that you see it. If this causes you a pang of regret, you are aware that you feel regretful. This is to say not just that you may be aware that *you* feel regretful (though of course you may),[4] but that it's regret that you *feel*.[5] That is also not to say that one is always aware of one's conscious experiences. However, conscious experiences are the sorts of things of which one will normally be aware if one reflects on one's current state, and to which we, as persons, refer when we describe or try to explain ourselves to ourselves or others. That is to say, references to conscious experience form a significant part of the resources we deploy in common sense or "folk" psychological explanation.

The term "consciousness" also designates extended episodes that involve sequences of conscious experiences. These may include such experiences as reciting *The Wasteland* silently to yourself or worrying all night about your financial difficulties or

practicing the opening movement of the *Hammerklavier* sonata. Likewise, it covers dispositional states that typically are manifest in conscious experience. So, for example, a person with a reptile phobia needs to be having no particular sort of conscious experience at any given time, but would have a conscious experience of terror on finding a snake in his path. Similarly for beliefs, desires, intentions, and so on, which are dispositional states normally manifest in consciousness. Finally, we include in "consciousness" faculties or capabilities whose exercise involves conscious experience, such as visual perception, autobiographical memory, volition and emotion.

The contrast class for consciousness viz. non-conscious states includes two sorts of states of special interest in the current context. First, those that include "unconscious" states, typically postulated by Freudian or other psychodynamic accounts of disorders, which are mental in origin. Such states are assumed to exhibit Intentionality: I unconsciously fear that my father wants to kill me or desires to have sex with another man. However, such states are non-conscious or unconscious; not simply in the sense that we may fail to attend to or self-consciously notice them, but in the sense that they are inaccessible to unaided introspection and reflection. Indeed, according to Freud's theory, they must be inaccessible if they are to do their causal work. Second are "sub-personal" processes that figure, for instance, in the brain's construction of a visual scene from specific sensory inputs; they translate conscious speech intentions into fluent phonological output, or orchestrate the specific sequence of bodily movements by which we execute intended actions, such as hitting a baseball or climbing stairs. Even 20 years of psychotherapy would not allow you to understand your sub-personal dynamics, given that we are primarily aware of such processes by studying EEG read-outs and single neuron recordings, not by introspection. Nevertheless, it has proved fruitful in cognitive science to think of sub-personal activities in terms of information processing, and perhaps they also involve some sort of Intentionality and thereby qualify as mental.

Although it is evident why we don't regard the above phenomena as conscious, it is still uncertain as to why they should not be included in a discussion of the mental in mental illness? Is it not possible that disorders in or of the unconscious, in the Freudian way, of beliefs and desires, or even sub-personal information processing, should also be regarded as mental disorders? Why consider (as we do) only disorders of consciousness in our effort to vindicate a distinction between mental and non-mental disorders?

The short answer is that we're skeptical about the reality of a Freudian Unconscious (i.e. of unconscious activity according to the Freudian model). We're not persuaded that things that are unconscious in this sense play any role in human mental disorders. While we do not doubt the reality of sub-personal information processing, or that such activity plays a role in mental disorders, we are reluctant to admit that a disorder in which the relevant dysfunction or deficit occurs only in sub-personal and consciously inaccessible activity should count as a *mental* disorder.[6] Impersonal entities such as thermostats and servo-control mechanisms operate or can also be fruitfully described in information processing terms. So also can activities of the digestive system (Gershon, 1998), the immune system, and the thermo-regulatory system. Certainly breakdowns of such systems do not count as mental disorders. In any case, we do not want our defense of the reality or categorical distinctiveness of mental disorders to rest on the assumption that such disorders are best understood in information-processing terms. In our opinion, this is not what the controversy concerning the definitional problem of mental illness is about.

The consciousness thesis

Nearly every instance of disease or illness affects the patient's consciousness, sooner or later, and becomes part of a patient's consciousness. Illness tends to bring with it unpleasant sensations – pains, chills, dizziness – anxious thoughts, distressing emotions, desires for relief, and so on. So ubiquitous are such effects that they cannot provide a useful distinction between mental and non-mental illness.

Some diseases, however, would still count as disorders and as threats to the patient's well-being, even if they had no effect on the patient's consciousness. For example, patients suffering from polycythemia vera – a bone marrow disease involving overproduction of blood cells – typically become highly irritable: they are restless, demanding, easily moved to anger. Although such conscious experiences contribute to the patient's distress, they do not constitute the real problem. In polycythemia vera, the threat to the patient's health lies in the increased risk of forming clots and the resultant increase in risk of heart attack

and stroke. A course of benzodiazepine therapy that relieved the patient's irritability would not cure the polycythemia vera. The conscious effects of the condition are not what make it a disorder. It is a disorder that, while it expresses itself in consciousness, is in itself not a mental disorder.

In suffering from unipolar depression, on the other hand, the patient's conscious state *is* the problem. The threat this condition presents to the patient's well-being lies precisely within the manner that the patient thinks and feels, and which is associated with depression. The persistent global sadness and pessimism are deviations from norms of psychological health and lead directly to failure to meet social responsibilities and neglect of self-care.

Depression may also lead to changes in the patient's bodyweight. Such changes may adversely affect the patient's health. However, a treatment that restored the patient's premorbid weight without altering conscious experience would not be an effective treatment for depression.

To put the point in general terms: a characteristic feature of mental illness is that the nature of the patient's disorder cannot be described without making reference to the patient's consciousness. Even if the conscious effects of an illness are significant so that a differential diagnosis could be made, they do not represent the distinctive threat posed to the patient by polycythemia vera, for example, and one could suffer from that disease even if conscious effects were absent. Not so for depression.

A second mark of mental illness lies in the functions played by conscious experience in the etiology of and treatment for a disorder. Consider etiology briefly first.

Alzheimer's disease involves a breakdown of the patient's conscious faculties, and its effects on conscious activity are central to what makes it a disorder. However, according to the literature, the patient's conscious "history," i.e. his premorbid conscious experience over the course of his life, has nothing to do with whether the patient develops Alzheimer's disease. It also likely has little effect on the specific time of onset, or the progress or course of the disease. On the other hand, there is considerable evidence that a person's conscious history figures significantly in the etiology of depression, panic disorder and obsessive-compulsive disorder.[7]

On the matter of treatment: in the case of some disorders it is therapeutically beneficial to encourage the patient to reflect on his own condition and to undertake deliberate efforts to change how he thinks or feels, for example, by use of cognitive-behavioral therapy to teach the patient to control panic attacks. The conscious constituents of mental disorders can be altered regardless of the patient's deliberate efforts, for example, by use of antidepressant drugs to aleviate dysphoric mood or electroconvulsive therapy to eliminate disturbing memories. But, we take it as a mark of distinctively mental disorders that effective therapy must engage the patient's mind, i.e. his understanding of his illness, recognition of situational vulnerabilities, history of conscious experience, and so on.[8]

We are now in a position to describe what we mean by the very idea of a mental illness or disorder. The description takes the form of CT.

Consciousness thesis (CT)

A disorder is a mental disorder when: (1) essential reference is made to consciousness in characterizing the nature of the disorder or the threat that the disorder poses to the patient's well-being, (2) consciousness plays a significant role in the etiology of the disorder and (3) changes in the conscious experience of the patient, achieved via conscious concourse with the patient, provide significant therapeutic benefits.

Within our framework, disorders that fully satisfy the above description qualify as mental. Disorders that fail to satisfy CT in any of its parts are non-mental. Disorders that satisfy some parts of CT but not others are "hard cases" for the application of the concept of mental illness. Such disorders may be best classified as mental in part. We also propose, although the following point cannot be pursued here, that contextual parameters often figure in the application of the concept of mental disorder, and in the identification of the conscious experiences proper to a mental disorder. To illustrate, in Culture X a certain set of conscious experiences may be accepted parts of depression, whereas in Culture Y similar experiences may merely mean that a person is properly grieving, in a socially reinforced manner (e.g. the loss of a tribal chief). Finally, it is logically possible that no illness satisfies CT and thus no illness, in our way of thinking, qualifies as mental. To mention one hypothetical example, suppose it is discovered that schizophrenics remain disabled in their social functioning, even after their cognitive and emotional status returns to normal. This would indicate a need to revise

our understanding of the nature of the disorder. Schizophrenia might no longer qualify as a mental illness. Call this feature of CT the *empirical conditionalization* of CT. Whether any particular disorder satisfies CT is an empirical question. It is conditional upon empirical discovery and the analysis of the disorder.

Now we turn to the definitional challenge of whether CT can be used, not just to draw a distinction between mental and non-mental disorders, but can be deployed in a manner that is compatible with assuming that mental disorder possesses a neurological or physical base.

Mental illness and brain disease

"Let us return to the contention that mental illness . . . is not 'mental' at all, but that the behavioral disturbance is associated with brain dysfunction and disease" (Taylor's claim), or that patients with so-called "mental illness are really individuals with illnesses of the nerves and brain" (Griesinger's claim). As noted by our mention of the empirical conditionalization of CT, we do not claim that "some people suffer from mental illness" expresses a synthetic a priori truth, immune to revision in the light of scientific inquiry. Should it prove to be the case that there are no disorders wherein consciousness plays the role outlined in CT, we would readily concede that there are no such illnesses as mental illnesses. However, we doubt that Griesinger's or Taylor's rejection of "mental illness" rests on a case-by-case review of the clinical evidence or upon detailed examination of the role of consciousness in illness. We suspect, rather, that it arises from the conviction that the notion of mental illness presupposes a mind-body dualism rendered untenable by the progress of medical science. Substantial immaterial minds are not a theoretical option for informed medical science, which is supported by basic physicalistic commitments. In Griesinger's and Taylor's view, the proposition that so-called "mental" disorders have their somatic basis in the anatomy, physiology and neurobiology of the brain also entails that "mental" illnesses really are diseases of the brain: that they are biological, not "mental" disorders.

Once again, we do not dispute that all mental disorders have their biological basis in the brain. We do dispute that this entails either that there are no mental illnesses as such or that all mental disorders just are disorders of the brain. To explain why we reject this implication, we need, first, to say how we understand the idea that mental disorders have a biological or neurological basis.

We assume that mental disorders have their basis in physical reality. We believe that this holds for all things mental and, indeed, for all particular things generally. Elementary particle physics provides the best, most credible, account of the ultimate constituents of physical phenomena. Mental phenomena – biological phenomena, sociological phenomena, economic phenomena, etc. – exist insofar as they are realized in or embodied in systems of physical particles and forces. The account of reality provided by elementary physics constrains the accounts of reality provided by the so-called "special sciences." What biology talks about, viz. cells, hormones, digestion, natural selection, and so on, must be realizable in particles and forces. There can be cells only if cellular structures and functions are realized in a system of elementary physical particles. However, biological concepts like that of the cell abstract away from ground-level physical details, and biological explanations that advert to patterns of physical events must be salient to the special concerns of biology. Typically, it is theoretically cumbersome and, often practically speaking, epistemically impossible to capture the concepts and generalizations of biology in the "lower-level" language of elementary particle physics. The same proposition holds true for the dependence of psychology or psychiatry on biology. Conscious activities, ordered and disordered, perception and hallucination, cognition and delusional thinking, and so on, have their base in neurobiological structure and function, so that the things studied in psychopathology must be realizable in neurology. But, psychiatry and psychology often do and must abstract away from neurological details in search of descriptions and explanations that are salient for understanding certain types or features of human distress and disorder. These, in our opinion, are the disorders identified in the language of CT viz. distresses that are not just expressed in consciousness but *of* consciousness. Such are the distresses distinctive of mental illnesses.

So understood, the proposition that mental disorders have their basis in biological reality does not entail that there are no mental disorders, any more than the proposition that biological activities that have their basis on the activity of physical particles and forces, entails that there are no biological

phenomena. Recognizing (what philosophers call) the ontological dependence or supervenience of the mental on the biological in no way discredits the reality of mental disorder. Nor, perhaps surprisingly, does the acknowledgment that the basal location of mental illness in the brain entails that any and all mental disorders are disorders or diseases of the brain. Griesinger and Taylor assert that "mental" illness is, or is associated with, "brain dysfunction and disease." But mental dysfunction need not involve brain dysfunction. It is possible to have a sick mind (i.e. an illness in consciousness) but a healthy brain.

Consider the drug addict. He fails to exercise prudent control over his consumption of some substance, alcohol, perhaps. He drinks more than is good for him: sacrificing more important interests (occupational and family responsibilities, etc.) to maintain his consumption of alcohol. A significant part of his problem is that when he refrains from or limits his drinking he feels bad: anxious, uncomfortable or depressed. That is to say, he goes through "withdrawal." This motivates him to continue drinking despite its otherwise negative consequences. To make matters worse, he finds that he must continually increase his consumption in order to avoid going through withdrawal. He therein develops an increasing "tolerance" for alcohol. With increase in consumption also comes increased cost; financial and personal. The addict becomes trapped in a cycle of compulsive, escalating consumption much to the detriment of his own well-being and that of others for whom or to whom he is responsible.

Through science we now understand a good deal about the neurobiological and neurochemical basis of addiction, in particular, about tolerance and withdrawal. The neurological roots of these phenomena lie in the brain's mesolimbic dopamine system: a system of neurons projecting from the ventral tegmental area to the nucleus accumbens that use dopamine as their neurotransmitter. Addictive drugs increase the availability of dopamine in the nucleus accumbens, either by inhibiting re-uptake or by binding to neurons that would otherwise inhibit dopamine production in the ventral tegmental area. Increased dopamine availability reinforces those activities that produce it. Hence, the mesolimbic dopamine system is sometimes called the "brain reward" or "dopamine reward" system. However, as repeated drug consumption increases concentrations of dopamine in the nucleus accumbens, it also stimulates the production of dynorphin, which in turn reduces dopamine availability by inhibiting dopamine production in the ventral tegmental area. The operation of this feedback loop sets up a situation in which dopamine reward delivered by a given dose of the drug continually decreases in response to repeated doses at the same levels; hence, there arises increased tolerance for the drug. Increasing the dose will temporarily restore the original level of dopamine reward, but it will also stimulate increased dynorphin production thus reducing the dopamine payoff produced by the dosage increase and so on. On the other hand, should the user reduce or eliminate the dosage, dopamine production/sensitivity in the brain reward system will remain inhibited for some time (a matter of days) before returning to normal. Until the system returns to normal, it will not provide the level of dopamine reward that the patient has come to "expect" in response to day-to-day activities: hence, withdrawal.[9]

We take drug addiction to be a mental disorder. But we also assume that the mental disorder of drug addiction has its basis in the operation of the brain's dopamine reward system. Should we conclude, then, that drug addiction represents a disease or disorder in the brain reward system? That would be a very hasty inference. The same brain reward system subserves a whole variety of psychological and biological functions: notably learning and response to injury or other sorts of stress. In decreasing the dopamine reward for repeated instances of the same stimulus, the brain may be functioning just as Mother Nature (natural selection) designed it to function. That there are specific neurological mechanisms that underlie the addictiveness of drug consumption and contribute to substance abuse is consistent with those mechanisms functioning adequately, neurologically speaking, insofar as they underlie the adaptive activities of learning and response to injury. "Fixing" the brain reward system so that it delivered the same reward with each exposure to a given stimulus (drug) might well disable the person by interfering with learning and exploratory behavior. Facilitating prudent consumption of a recreational drug simply is not what the system was designed to do. So, from a neurobiological point of view, the brain might be functioning well, even if in doing so, the brain reward system underwrites an addict's mental disorder.

Is there a general lesson about mental illness here? Yes, there is, and it goes like this. One should not assume that the neurological basis of a mental

disorder is itself a neurological disorder. Some disorders qualify as mental even though their neurological base is not unhealthy.

Of course, in response, one might insist that any pattern of neural activity that subserves or serves as the supervenience base for mental disorder counts, for this reason alone, as a brain disorder. However, such a concept of brain disorder would be conceptually or semantically parasitic on the concept of mental disorder, and on the normative standards for proper psychological functioning. They would be disorders, not in virtue of some primary, neurologically specifiable breakdown in the brain, as revisionists seem to presuppose, but simply because relevant neurological activities contribute to some condition that is psychologically undesirable. It would be pointless to offer "brain disorder," so understood, as a substitute or replacement for "mental disorder." Such a notion of brain disorder presupposes and is defined by prior reference to the notion of mental disorder.

One might concede that not every mental disorder is associated with a neurological disorder, but insist that the slogan "Mental disorders are brain disorders" nevertheless expresses an important truth. The brain is where the causal-explanatory action is regarding mental disorders. Explanation by reference to consciousness or conscious activity, for example, in the case of alcoholism can be explained by reference to the brain's reward system. So, if every mental disorder is realized in the brain, will not questions regarding the etiology (and treatment) of a disorder be answered by reference to brain events? We argue that this is not the case. Rather, explanation of how a person comes to be mentally ill must include an explanation of how the patient's brain came to be in a certain condition. Causal connections that are specified at the level of conscious experience, say, between certain patterns of thinking or desiring and a given mental disorder must be realizable at the level of neurophysiology. But this does not mean that *all* the factors relevant to explaining (and treating) mental illness must be describable in neuroscientific terms.

Again, consider the drug addict, in particular someone addicted to heavy drinking. Suppose that an alcoholic with a craving for a drink is able to resist his impulse to drink now, while his boss is present or if there is a raging fire in his house. He consciously judges that he has good reason to refrain, viz. fear of job loss or of being consumed in a blaze, and he acts accordingly, prudently. Shouldn't we say that reference to conscious activity is necessary to explain such features of his drinking behavior? It seems to us that we should. Or suppose such a person cannot refrain from drink when he perceives that the reward of alcohol is more proximate than other rewards and unthreatened otherwise? Again, it seems that we need to answer questions about why he drinks in such circumstances, not just by reference to the brain's reward system, but also by referring to his perception of alcohol's proximity. Surely, we know that the consciously perceived proximity of reward links up with addiction even if we can't say exactly how such perception links up with neural mechanisms.[10] As one clinician sensitive to the role of conscious experiences in addiction observes: "Notice the bargaining that goes on in [an alcoholic's conscious] mind, and [the] profound ambivalence about giving up alcohol."[11] Bargaining has its source in a person's conscious ambivalence about the desirability and long-term implications of self-control.

Perhaps alcoholics cannot consciously and emotionally bridge the gap between seeing themselves as heavy drinkers and seeing themselves as nondrinkers. Alcoholism and other addictions, Andrew Garner and Valerie Hardcastle point out, "might be such life-defining habits, [that] addicts can't stop because they can't genuinely imagine their lives – their particular lives – without addiction. To stop means to become someone else, someone unknown. And for most of us, that is a scary thought" (Garner & Hardcastle, 2004, p. 376). The fact that such conscious activities of imagination and others play such causal-explanatory roles in addictive behavior means that even though drug addiction is neurally based, it qualifies as a mental disorder: as a disorder in and of consciousness.

So in our proposal, we posit that in certain contexts and with respect to certain disorders, knowledge of what goes on in conscious experience may offer us more useful guidance in the explanation (and treatment) of a patient's problems than knowledge of his neurological condition alone, and also that this argument is completely compatible with the basal dependence of mental disorder on the brain. It is in terms of such knowledge that psychiatry might manage to preserve a category of mental illness or disorder.

The crucial question behind the category of mental illness, then, is one that neuroscientists should readily pursue with philosophers of psychiatry. It is not whether mental disorders have careers in the

brain (of course they do), but whether reference to conscious events together with reference to neural mechanisms is likely to result in a better or more complete understanding of certain illnesses than neuroscience can craft on its own or in its exclusive terms. Our understanding and treatment of mental illness requires a complementary partnership between the languages of neuroscience and that of conscious experience. To understand human mental illness and disorder, one has to respect conscious activity. This is not because human consciousness is not brain based, but because mental illness is illness in and of the conscious mind.

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Endnotes

1. We first presented this thesis (though not by the name of CT) in Graham & Stephens (2006).
2. The notion of mental illness also has critics who reject the proposition that the human problems so designated represent illnesses, biological or otherwise, rather than problems of living. Such critics wish to preserve reference to the mental, but decline to describe any mental condition as an illness. In the current paper we ask our readers to indulge our disinclination to deal with this line of criticism of the concept of mental illness. See Graham & Stephens (2006) for discussion.
3. As will be evident in due course, for us to say that mental illness has a neurobiological basis does not, of itself, entail that mental illness is a brain illness or disease. The brain may serve as the basis of mental illness without the brain being ill.
4. See G. Lynn Stephens and George Graham, "Philosophical Psychopathology and Self-Consciousness" in S. Schneider and M. Velmans (eds.), *A Companion to Consciousness* (Medford, MA: Blackwell 2006) for discussion of the self-attribution or self-awareness of conscious states and processes that occurs in certain specific sorts of mental illness.
5. Philosophically complex issues about privileged first-personal access to the character or identity of one's conscious states lurk within this sentence. We must avoid discussion of those issues here.
6. One reason that at least one of us is disinclined to categorize deficits in sub-personal information processing as mental illness is because, arguably, mere information processing lacks genuine intentionality and therein fails to qualify as mental. See Graham *et al.* (2006), for discussion.
7. It is worth noting, and see Graham and Stephens ('Psychopathology', 2006, op cit) for discussion, that cultural, environmental, and situational influences in the etiology of psychiatric disorders usually work through the patient's conscious representation of himself and his world. Exposure to radiation or asbestos dust causes disease just as readily in those who do not know they have been exposed as in those who do know. By contrast, spiders trigger phobic reactions in vulnerable people only if they are aware of the spider. For a review of the evidence regarding the role of consciousness specifically in depression, see Bentall (2003, pp. 233–269).
8. We briefly explore some of the issues connected with the treatment of mental illness in Graham & Stephens (2006). The issues are complex. It is not our view that conscious concourse with a victim of mental illness, roughly, psychotherapy, is or should be sufficient for the treatment and amelioration of each and every sort of mental illness. Given the neural base of mental disorder, and the many possible variations in that base that are present within different persons or the same person at different times, drugs (and other neurochemical treatments) and psychotherapy likely often work better in tandem than either form of treatment alone. For one outspoken plea for the integration and mutual adjustment of psychotherapy and drugs in the treatment of mental illness, see Hobson & Leonard (2002).
9. The above account of drug addiction and of its neurological basis is drawn from Nestler & Malenka (2004). See also Montague & Dayan (1998).
10. See for an examination of the causal-explanatory role of perceived proximity in cases of addiction, Ainslie (2001).
11. See Mitchell (2001). Words in brackets added.

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