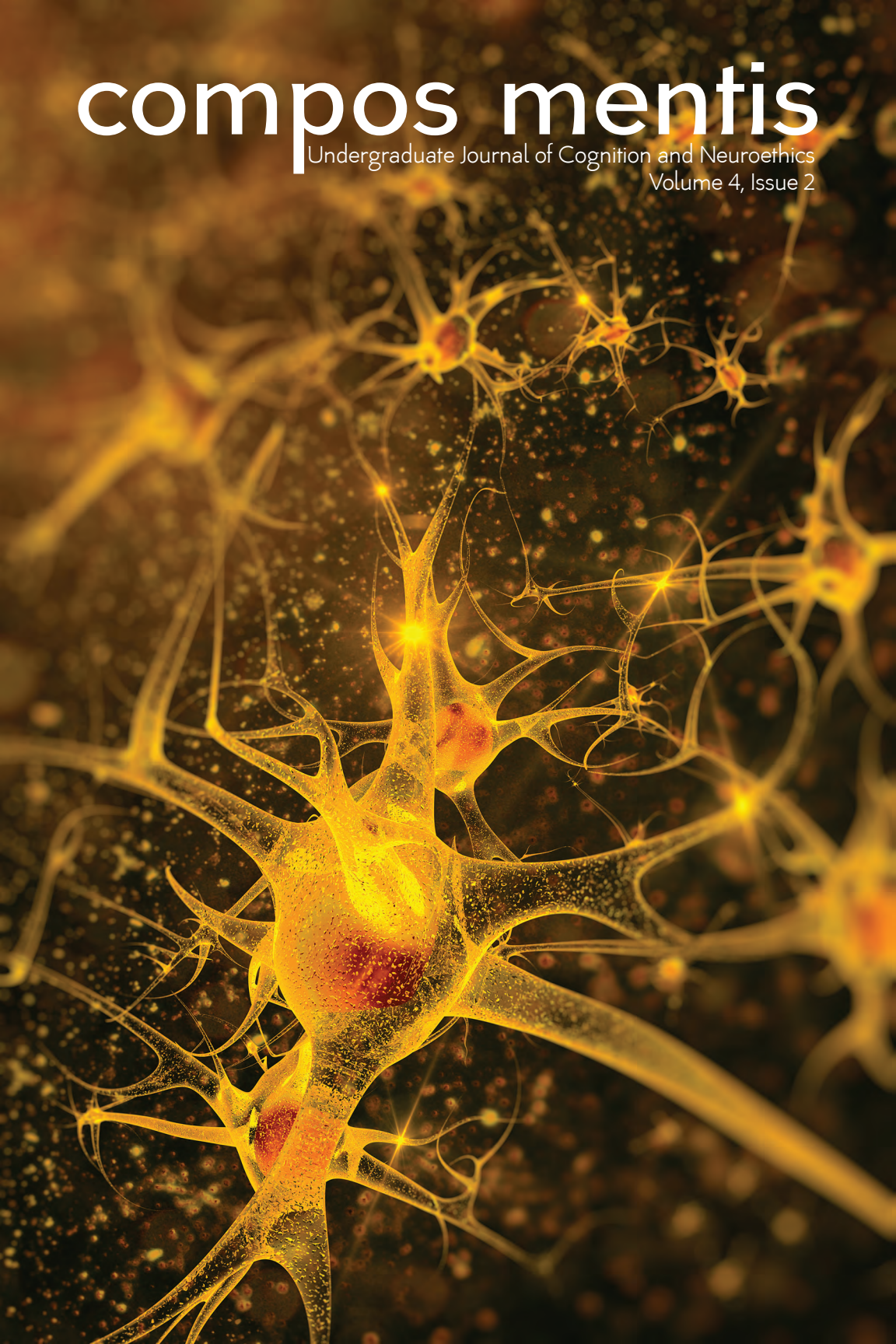


compos mentis

Undergraduate Journal of Cognition and Neuroethics

Volume 4, Issue 2



compos mentis

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Publication Details

Volume 4, Issue 2 was digitally published in June of 2016 from Flint, Michigan, under ISSN: 2330-0264.

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A Psychological Account of the Formation of Self Deceptive Beliefs

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ABSTRACT

The phenomenon of self-deception has puzzled thinkers for centuries. How can this entity known as “the self” come to believe a proposition when it appears to possess sufficient evidence to suspect the proposition’s falsity? It is a puzzling phenomenon, and the discussion stemming from self-deception has spawned numerous theories and sub-discussions. Notably, theorists divide over the large questions of intentionality, rationality, and the cohesiveness of the self in the light of self-deception. Traditionally, thinkers have relied heavily on rhetoric and intuition to formulate and defend their theories. In recent years, however, the fields such as cognitive psychology and neurophysiology have begun to contribute critical empirical evidence to the conversation, allowing theorists to put some meat behind their models. Studies in both fields uncover mechanisms hypothesized to play a role in self-deception, providing the groundwork for piecing together a holistic, empirically-advised model of self-deception. This paper works to accomplish just that, integrating cognitive and physiological studies into a coherent model that effectively describes self-deception from an empirically plausible framework. It will first describe a cognitivist model of the phenomenon, positing that the human brain aims first and foremost to create a coherent account of the world around it as quickly as possible. It further hypothesizes that, in the name of survival, the brain accepts the likelihood of minor errors as a consequence of fast information processing in exchange for greater assurance that it will not commit critical errors. This theory uncovers a key point—that the brain is less concerned with how events truly transpire in comparison to the coherence of the brain’s narrative and the efficiency of its processing. With the cognitivist model in mind, the paper will explore studies surrounding emotional processing. These physiological findings suggest that the brain’s processing of emotionally salient stimuli occurs in parallel with dry, rational cognitive processing. Moreover, it suggests that these parallel streams of processing combine to affect the brain’s final output. The paper will conclude by suggesting cognitive dissonance as the underlying initiator of the afore-mentioned information processing biases that lead to self-deception. This claim is made because cognitive dissonance appears to arise out of both a rational and an emotional revulsion to the truth claim being realized. The resulting model aims to provide a holistic, psychologically-informed account of how and why self-deceptive beliefs could arise.

KEYWORDS

Self-deception, cognitive psychology, neurophysiology, emotion, cognitive dissonance, empiricism, psychology, error minimization (PEDMIN), unintentional, information processing, cognitive bias

The phenomenon of self-deception has inspired a great deal of literature. Philosophers and psychologists alike speculate about whether self-deception is intentional or unintentional, whether it is a species of irrationality, and which accounts of “the self” best cohere with the mechanisms of self-deception. Many of these accounts are focused on conceptual analysis, concerned with defining the terms of the debate, generating necessary and sufficient conditions for the meanings of theoretical terms like “intention” or “self.” While such conceptual work is foundational, more input from literature steeped in empirical study would advance the discussion. Fortunately, there is a growing body of work that explores the philosophical implications of self-deception from an empirical foundation, using modern psychological and neurological research. This paper will focus on incorporating some of the cognitive and neurological models aimed at explaining self-deception. It will integrate empirical philosophical accounts as well, seeking to create a holistic, empirically-informed model of the mechanisms of self-deception.

Useful Deceptions in Perception

Self-deception, as a primarily neurological phenomenon (that is, a state whose genesis is in the brain), first requires a conceptual framework of the brain and its interaction with the world around it. Perceptual studies of the brain inform us that the brain primarily functions to paint a coherent picture of the external world—an observation evidenced by a variety of optical, auditory, and tactile illusions. These illusions arise out of the brain’s tendency to employ heuristics, which are essentially cognitive shortcuts that reduce processing time. This tendency is perhaps most apparent in the brain’s visual system, as it employs a small army of heuristics in order to quickly identify pertinent information regarding the surrounding environment. These are exemplified in the Gestalt principles by which the brain organizes and groups objects, using fast perceptual information to discern what part of the scene is the figure and what part is the background. For instance, when presented with an ambiguous picture, the brain often perceives the objects in the bottom of the scene as the figure because, more often than not, this sort of perceptual organization holds true when we interact with the world. This inference allows the brain to quickly make sense of the environment with a remarkably high accuracy. These strategies are not perfect, but they result in quick interpretations of visual information and, ultimately, a quicker physical response to stimuli.

The quickened response made possible by heuristics may determine the difference between the life and death of an organism. When a squirrel decides to scamper up a tree due to a perceived threat, it rarely initiates that action based on complete perceptual information. Rather, it employs heuristics and sacrifices objective accuracy regarding the perceived threat in favor of making a fast decision. Often times, these perceptual shortcuts result in a false alarms, yet these false alarms are regarded as acceptable because one instance of erroneous inaction could end the life of the squirrel. Therefore, perceptual heuristics are vital to the survival organisms. The reinforcing lesson learned from the brain's use of heuristics is that the brain consistently sacrifices an accurate perception of the outside world in favor of forming a coherent picture. This fundamental premise provides a useful foundation to build a theory of self-deception from. This paper will continue to provide evidence in support of this foundational concept, building a model of self-deception around it.

A Cognitive Model of Self-Deception

Cognitive research in psychology provides vast insights into the mechanisms employed by the brain to vet information and make decisions on sensory input. James Friedrich provides an empirical review of these mechanisms, and the resulting analysis has become an oft-referenced cognitive model of psychological mechanisms geared toward self-deception. He builds from the same foundation proposed above, that "our inference processes are first and foremost pragmatic, survival mechanisms and only secondarily truth detection strategies" (Friedrich 1993, 298). What does Friedrich mean by "pragmatic"? To start with, he notes that the brain seeks maximum efficiency by balancing the quality of its information processing with the amount of cognitive effort this processing requires. This proposition does not imply that the brain functions solely to conserve cognitive energy. That would be too simplistic and would undermine both our intuitions regarding the intricacy of the brain's abilities and studies supporting these intuitions. Friedrich hypothesizes that the brain seeks efficiency by working to accomplish a more complex goal than simple energy conservation. He proposes that the brain balances cognitive effort and truth-processing in order to most effectively reduce critical errors. He posits that the greatest danger in decision making is a critical error that results in harm being inflicted upon the organism. Moreover, an effective avoidance of critical errors necessitates the allowance for

smaller errors. For example, in the woods at night, it is more advantageous to perceive a rustling in the underbrush as a predator, even though the overwhelming probability suggests that it is a small animal, the wind, a branch falling, etc... The mantra, "better safe than sorry", applies here, as the brain sacrifices the probability of truth detection (the likely cause of the noise) in favor of avoiding a critical error (falsely assuming there is not a bear in the forest when, in fact, there is). Therefore, the first core proposition of this analysis of self-deception is that humans are pragmatists who are "more concerned with error reduction than truth detection," a proposition evidenced by the perceptual heuristics employed by the brain to come to fast conclusions (Friedrich 1993, 300).

Friedrich continues by offering empirical support of his claim. The resulting picture is a rather intuitive, cohesive method of viewing the brain and its interaction with the surrounding world. For instance, a study found that a certain agency initially judged applicants on the criteria of extraversion/introversion. They were seeking applicants who were friendly, outgoing, and team players. Although there is no true correlation between extraversion and these qualities, the hypothesis exists that extraverts will display these qualities at a higher rate. Therefore, the agency proceeded to cut all applicants who displayed signs of introversion so as to avoid the costly error of hiring a withdrawn, isolated employee (Friedrich 1993). This quick heuristic likely eliminated worthy employees, but it also accomplished the general task of eliminating employees that did not fit the company's mold. Another study asked participants to evaluate hypothetical scenarios where a baked cake turned out either well or poorly, and they were asked to assess the variables that could have caused either the positive or negative outcome. When the cake turned out poorly in the scenario, participants tended to recommend "logically disconfirming (-H)" tests, meaning that they eliminated suspected causes while keeping other, less suspicious variables. When the cake turned out well, though, they "shifted toward +H tests (keeping the suspected cause and eliminating others)" (Friedrich 1993, 302). Friedrich notes that -H tests are equally appropriate for detecting errors. This study, though, showed a change in test strategy when the outcome was positive. Friedrich interprets this as evidence in favor of a PEDMIN analysis, noting that "falsification logic still requires elimination of the suspected causal element, whereas error minimization logic suggests a +H test" (Friedrich 1993, 302).

This account of the brain and its interaction with the world around it suggests a plausible, functional account of self-deception. In this model, the large majority of self-deceptive cases could be explained as the output of an organism aimed at attaining maximum efficiency in decision-making processes. To accomplish this, the brain employs methods aimed at reducing costly errors rather than aiming to uncover the truth of how things actually are. These biasing mechanisms could result in altered information encoding, memory suppression, and biased evidence gathering—all harbingers of self-deceptive beliefs. Indeed, the self may be deceived through these processes, but this deception is not a deliberative act. Friedrich's PEDMIN model suggests that it occurs in the realm of fast, subconscious information processing, skewing the data so as to lead to safer, yet biased decisions. Self-deception, then, is portrayed as the outcome of a pragmatic, evolutionarily-advantageous set of processes that protects the organism, sacrificing accuracy of incoming information in favor of avoiding situations where critical errors may occur.

Emotional Processing in Self-Deception

From the evidence presented above, the proposition that people process information with the primary intent of avoiding costly errors appears to present a valid picture of how the brain works. Certainly, cognitive biases can skew perceptions of reality, and a pragmatic strategy for information processing and error identification gives reason to skew reality. However, the PEDMIN analysis misses a key aspect of information processing—the emotional aspect. Friedrich notes that the PEDMIN model does not imply that the brain consistently carries out its error-reducing functions accurately and correctly, but he does not make any move to include other major factors that could skew the brain's analysis of information. There are diverging accounts from Friedrich's suggesting that humans do not process data from a purely logical standpoint. They point to cases of self-deception that do not appear to be grounded solely in skewed, pragmatic processing mechanisms, suggesting that emotionally-biased information processing influences the state. This is corroborated by psychological and physiological evidence showing that humans are not fully efficient or pragmatic on either the conscious level or the unconscious. Though pragmatism may account for a piece of a theory of self-deception, emotional processing appears to also play a role in the full process.

There are a number of accounts that incorporate emotion into theories of self-deception. They explore how the intensity of emotion can destabilize a person's rationality and motivate self-deceptive beliefs. These accounts approach from a variety of directions—conceptual, computational, neurological, and psychological—helping to flesh out the concept and to aid in filling the apparent void where the PEDMIN analysis falls short (Correia, 2014; Sahdra and Thagard, 2003; Halgren and Marinkovic, 1995; Scott-Kakures, 2009.). It should first be noted that an integration of emotional processing into a PEDMIN analysis of information processing does not contradict the PEDMIN theory. It does not require that we weaken the claims of the theory, either. Instead, a deeper understanding of the role played by emotional processing in facilitating self-deception integrates itself into the existing conception put forward, creating a more complete picture of the phenomenon. The available evidence will be evaluated in the following section and integrated into this emerging picture.

In the computational realm, two researchers created two differing models of information processing aimed at explaining the genesis of self deception (Sahdra and Thagard, 2003). They specifically used their models to explore how Dimmesdale, the adulterous minister in "The Scarlet Letter," could have processed the conflicting information of his sins interposed on his role as a spiritual leader. They present the "Cold Clergyman" and the "Hot Clergyman," delineating between a cold, rational self-deceptive analysis and a hot, emotionally-steeped descent into self-deceptive beliefs. In the rational analysis, the primary goal sought was coherence. When two incoherent propositions appear in this model, other third-party propositions check the first two, weighing all factors to create the most rational, coherent set of propositions. This sort of analysis runs similarly to the PEDMIN analysis. In their second, "hot" analysis, the researchers introduced emotional valences into their computational neural networks. The positive or negative values of the valences influenced the rational propositions, changing their weights. In the final version of the researchers' model, emotional valences altered the way that information was processed and led to different self-deceptive propositional outcomes when run on the propositional web of Dimmesdale's self-deception. By showing that the inclusion of emotions in the processing of information alters the propositions involved in a self-deceptive belief system, the authors show the possibility that emotional processing is involved in the formation of beliefs.

The computational conclusions put forward are corroborated by extraordinary findings in the physiological realm. This paper proposes that emotional processing occurs in the same fast, unconscious processing realm as the information processing put forward in the PEDMIN analysis. An EEG study by Eric Halgren and Ksenija Markinkovic supports this proposition. In their study, they recorded electrical signals from participants during the processing of emotionally charged stimuli. Their EEG readings show limbic system activation beginning 120 ms after stimulus onset. The limbic system contains structures associated with emotional processing, suggesting that this processing begins early on in information processing. Moreover, this sort of timeline suggests that it occurs concurrently with other fast cognitive processing. Such a synchrony of processes “permits limbic input to shape the content of the encoded experience rather than simply to react to its content” (Halgren and Markinkovic 1995, 1146). The importance of this point should be underscored, as it provides evidence that emotional processing is an *agent* in determining the encoded experience rather than an *outcome* of processing from different mechanisms. Since emotional processing occurs so early in the processing of information, it likely influences the outcome rather than simply reacting to the outputs of other processes. Moreover, this means that emotional processing stemming from the limbic system of the brain could contribute to “the myriad of psychological defense mechanisms that may distort or eliminate the conscious experience of an emotionally significant event” (Halgren and Markinkovic 1995, 1146). This direct physiological evidence of fast, emotionally salient processing provides tantalizing evidence in support of the role of emotion within the brain’s analysis of information. The model beginning to arise from this evidence suggests that the information-processing biases instigated by emotionally salient stimuli function below the realm of conscious experience. This sort of parallel processing allows for emotions to factor into the final analysis of information while still allowing for the pragmatic PEDMIN analysis to occur separately.

Integrating a Cognitivist Approach with Emotional Processing

A slew of authors have worked to incorporate aspects of emotional processing into a complete picture of self-deception, and they fall at different points across the spectrum regarding the pervasive questions of self-deception. For instance, thinkers debate the intentionality underlying self-deceptive states when emotion

comes into play. Some thinkers understand the phenomenon as an entirely unintentional process (Mele, 2003; Correia, 2014). The prevailing consensus across such accounts posits that self-deception arises out of some sort of cognitive bias (or biases), where the self-deceived is a “victim of a phenomenon of judgement distortion that is both involuntary and unconscious” (Correia 2014, 317). While an unintentional view of self-deception tends to prevail when incorporating emotions, certain accounts hedge on the answer and do not provide a solid move toward intentionality or unintentionality. Nelkin proposes that the “desire to believe” is a necessary condition of self-deception. This desire, however, “need not be conscious,” leaving the question of intentionality open to situational influence (Nelkin 2002, 395). In this instance, the author argues that—though the individual is likely unaware of the actual biasing process or of the biasing effect that emotional processes have on information—the individual must have an intentional, motivational hand in initiating the unconscious process.

Nelkin’s account is possible. However, the current model rejects an intentional account based on the psychological and physiological evidence presented above. While an individual may experience the feeling of direct control over his emotions, research such as Halgren’s suggests that the genesis of such thoughts is in the fast emotional processing occurring in the limbic system, which resides outside the realm of conscious control. The clash between the two hypotheses leads to a circular debate regarding the genesis of the process. Does the desire direct neural processing or does neural processing direct the desire? When stated in more psychological terms, the question of intention turns into a debate between top-down and bottom-up processing as the instigator of the process. For this reason, we will eschew the terms “intentional” and “unintentional” for now in favor of the more psychologically relevant terms. This top-down/bottom-up debate is still contested. For the purpose of this paper, it could perhaps be sidestepped succinctly by ensuring that we hold to a tight definition of self-deception. If one is not careful, the concept of self-deception can slip into the realm of simple wishful thinking, the genesis of which is more obviously a top-down phenomenon. Suffice it to say, the interpretation of the psychological and physiological evidence presented above converges to provide a reasonable explanation of the phenomenon as the output of a fully unconscious, bottom-up process.

Mele defends a similar hypothesis to the one stated above. He posits the following thesis:

In some instances of entering self-deception in acquiring a belief, an emotion makes a biasing contribution to the production of that belief that is neither made by a desire nor causally mediated by a desire. (Mele 2003, 168).

He also holds the opinion that emotional processing can bias the acquisition of a belief, which mirrors the earlier suggestions from the earlier studies. Furthermore, Mele integrates a PEDMIN analysis into the emotional process. He adds a wrinkle to PEDMIN, though. Given one's emotions about a particular state (e.g. I am fearful my wife is cheating on me), the *emotional state* resulting from evidence confirming (or denying) the proposition is in itself a costly error. Therefore, this iteration of the PEDMIN model incorporates emotional states in that emotional states are factors and consequences in the error analysis, serving as both costly and non-costly outcomes to weigh. This account is attractive in the way that it integrates PEDMIN and emotional processing. Trivers adds to this assertion. He brings the reader's attention to a plethora of psychological studies showing that humans tend to encode information in a positive light, at times entirely failing to encode material that evokes negative emotions about the self (Trivers 2011). He shows that the brain's encoding of events is biased by positive or negative affect to the point that it causes self-deceptive recollections of that event. Even seemingly dry, emotionless instances of self-deceptive beliefs do not escape some level of implicit emotional biasing. For instance, simple PEDMIN perceptual errors (which could hardly be counted as self-deceptive) still activate an emotional response regarding the potential cost of significant errors. For example, the possibility of allowing physical harm to be done upon myself by ignoring the rustling I hear in the forest at night will bring about emotions like fear, which will influence my processing of the visual and auditory information I am perceiving. It appears that emotions are attached in even the most modest of perceptual biases.

Cognitive Dissonance: A Motivating Initiator for Self-Deceptive Processing

From the previous arguments, we are given a picture of self-deception as an integration of the brain's rational function to minimize costly errors alongside the biased processing of emotionally salient information. It appears that these processes initially function independently, but their combined effect results both in biased decision making and inaccurate encoding of information. Within this understanding, a key element is missing that has been mostly ignored to this

point—motivation. This account maintains that the motivation for self-deception is entirely unconscious and unintentional. In previous sections, it has only briefly discussed the motivation underlying the processes—survival in the case of PEDMIN and a sort of emotional coherence or avoidance of noxious stimuli in emotional processing. These vague understandings should be explored more. In accounting for these underlying motivation, a remarkable parallel with the social psychological phenomenon of cognitive dissonance emerges. The final section of this paper will integrate cognitive dissonance into the previously established understanding of self-deception, exploring its role as an unconscious motivator for both the PEDMIN and the emotional processes.

Cognitive dissonance can be used both to explain the motivation underlying self-deceptive processes and to give an account of how people are able to vehemently defend seemingly dubious beliefs. The theory of cognitive dissonance posits that, first and foremost, human beings strive for consistency (Festinger 1957). When discrepant cognitions and actions appear, they produce an uncomfortable psychological state. For instance, my preference to view myself as an honest individual conflicts with the white lie I told to my uncle to avoid an awkward confrontation in the family. This uncomfortable state results in the selection and pursuit of dissonance-reducing strategies. These dissonance-reducing strategies—behaviors such as thought suppression, biased evidence seeking, and biased information encoding—lead to self-deceptive beliefs. Scott-Kakures adds to the traditional account of cognitive dissonance, noting that humans must spend a large amount of energy on settling questions about reality when they process the events in detail, making it advantageous to eliminate discrepant cognitions before they are fully processed (Scott-Kakures 2009). Moreover, it is less cognitively taxing to come to gain and maintain certainty about conclusions, even within a clearly uncertain environment. As the PEDMIN model noted above, the brain cannot waste time ascertaining the true danger of a costly error within a situation. Rather, it best serves by asserting a confident perception of reality that most effectively minimizes the risk of critical errors.

With the previous points in mind, a summary of the proposed model of this paper is as follows. It posits cognitive dissonance as the motivation that underlies the parallel process that the brain uses to mediate and eliminate this dissonance. These processes initiate a PEDMIN analysis that is influenced and adapted by simultaneous emotional processing. The brain employs this strategy in order to

eliminate cognitive dissonance, allowing for minor misinterpretations of data in order to avoid the greater consequences of making larger errors. These errors can be both practical and emotional, as it is disadvantageous both to be eaten by a bear and to lose positive emotions regarding one's self-conception. These misinterpretations of data are further driven by the emotional valences both of the information being processed and the propositions about the self that are at stake as a result of the analysis. This self-deceptive analysis happens quickly, and it occurs with speed for a handful of reasons. First, as Trivers and Scott-Kakures mentioned, the sooner the brain eliminates discrepant information—either through biased encoding, directed forgetting, or thought suppression—the less cognitive resources the process of elimination consumes (Trivers 2011; Scott-Kakures 2009). Oftentimes, this analysis works so quickly and effectively that cognitive dissonance never arises, decreasing the amount of effort required to suppress the inherent contradictions in self-deceptive beliefs. Regardless of the timeline, though, the model employs these processes to alleviate the negative effects of cognitive dissonance.

This model of the processes that facilitate self-deception stands on an empirical foundation. Individually, PEDMIN-like cognitive processing, emotional processing, and cognitive dissonance have all garnered the widespread support of empirical literature. The combination of these processes creates an plausible, integrative model of how self-deceptive beliefs may arise in humans. Due to the literature supporting its individual components, this work is more than simply conceptual and speculative. It represents a psychologically plausible model of the phenomenon and should stand the test of conceptual criticism due to its supporting literature.

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Belief According to Reasons: Can the Brain Detect Truth?

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ABSTRACT

Reductive physicalism holds that mental states are identical to brain states. In this paper I argue that if reductive physicalism is true, it follows that our beliefs can never be justified. Since we do in fact form justified beliefs, it follows that physicalism is false. In order to defend my claim that reductive physicalism entails that we never form justified beliefs, I first point out that if reductionism is true, belief states are brain states. This entails that they are caused by previous neurological factors and other brain states which bring about beliefs in virtue of their physical and chemical properties such as the size or charge of the neurotransmitters involved in neuronal signaling. This positively excludes the possibility that evidence in favor of a proposition is causally responsible for the belief in question, consequently beliefs are not justified by evidence. After I give my argument, I offer a potential way out on the reductionist's behalf. The reductionist perhaps can identify a mental state recognizing the evidence for a proposition with a brain state that causes the belief in that proposition thus linking the cause of a belief with the evidence for the belief. However, this will not suffice for the reductionist. The connection between the evidence and the belief is too loose for it to count as justification. The mental state which causes the belief still brings about the belief in virtue of its physical properties and not its properties as embodying reasons for the belief in question. Consequently, justification is not secured. In the final section of this paper I consider some implications of rejecting reductionism for neuroscience and philosophy of mind.

KEYWORDS

Reductionism, Functionalism, Physicalism, Materialism, Neuroscience, Cognitive Science, Belief, Cognition, Neurophysiology, Epistemology

As humans, we take ourselves to be capable of forming true beliefs. The contrary position is self-refuting, as it is impossible to believe the statement "I cannot form a true belief" to be true. Moreover, we take ourselves to be capable of forming true beliefs based on reasons, that is, we think some of our beliefs are justified. The contrary would be similarly self-refuting in that if someone held the statement "I cannot form a justified true belief" to be true, she would likewise have to admit that there is no defense she can give in favor of it. The entire enterprise of thought, of any sort, ranging from typical interpersonal interactions to complex theories in particle physics, presupposes that we are capable of forming true beliefs based on various kinds of justification. It is correct to conclude therefore, that humans (all things considered) at least some times have the cognitive capacity to form justified, true beliefs (JB from now on).¹

It is uncontroversial that the primary organ of cognitive function in the body is the brain. Of course, the brain depends on the other organs (e.g. heart for blood) to survive, but the brain itself is what carries out human cognitive tasks such as thinking, planning, choosing, and evaluating. Therefore, if forming JB's is a cognitive task, we should expect that it is a function of the brain. However, what I will argue in this paper is that the brain *alone* cannot carry out the task of forming JB's. I will not argue that the brain doesn't play any role whatsoever as this would overstate the case. Without the proper function of the brain, humans could not form coherent thoughts at all! But simply because the brain is necessary for the formation of JB's, it does not follow that the brain is alone *sufficient*. Since minds do carry out this function and brains do not (by themselves) it follows that the mind and brain are not identical and there is something in addition to the brain which constitutes the mind. In section I I will give introduce reductive physicalism. In section II, I will argue that reductive physicalism fails to account for JB's. In section III, I will consider a potential retort from a reductionist. Finally, In section IV, I will look at how this applies to various positions in philosophy of mind as well as how it relates to neuroscience and psychology.

I. Reductionism

The view that the brain alone is sufficient to produce the mind is a thesis associated with physicalism about the mind. Physicalists hold that the mind is a

1. By "justified" I simply mean there is evidence supporting the belief in question. I do not care for the purposes of this paper whether or not the justification is sufficient for knowledge.

material thing which in contemporary thinking, this equates to holding that the only component of the mind is the physical brain, nothing more. The opposite position is typically a kind of dualism² in which the brain is one component of the mind, very important, however, it is not sufficient to produce a mind. Therefore, in making a mind, there is another component as well. Physicalism denies this claim, however, physicalists are not agreed on exactly how the brain gives rise to the mind. The specific type of physicalism I will address in this paper is reductive physicalism which *identifies* the brain with the mind. So the mind is nothing in addition to the brain because the mind *is* the brain considered under a different description (Lewis 1966, 17). Mental states (conscious states such as desires, beliefs, qualia, etc.) and brain states (i.e. the physical configuration of the brain at a certain point in time) are to be identified with one another. Now, there are different ways in which they are to be identified. For example, the most popular reductionist view is called functionalism because it identifies a mental state with a certain functional state of the brain. So the reason one brain state is to be identified with a mental state is because of the functional (role in a causal system) characteristics of that brain state (Levin 2013). However, the specific types of reductionism need not concern us here. I may now proceed with my argument.

II. Against Reductionism

Reductionists hold that mental states and brain states are identical with one another in virtue of some property of the brain state, perhaps its type of brain state or its functional characteristics. It follows therefore that reductionists hold belief states (specific kind of mental state in which a person takes some proposition to be true) are to be identified with brain states. Under ordinary circumstances, the typical cause of a brain state is some prior brain state or more simply, a series of neural interactions. For instance, while the brain state associated with seeing a cat is not caused by a prior brain state (at least not entirely), it is caused by input from sensory neurons in the eyes. The only exception to this rule could be a case of direct manipulation, as for instance, if a neurosurgeon were to stimulate a neuron or brain region. But, in general, brain states are caused by interactions among neurons (cells in the brain and periphery which communicate to the brain via electrical and chemical signals). Of course, the causal story in question is quite

2. There are forms of neutral monism which I would not classify as forms of physicalism but we can leave them aside at this point in the discussion.

complex. There are billions of neurons and trillions of connections between said neurons in the brain. The point is that *neurons* do the causing in the brain. The interactions among *neurons* bring about brain states.

The reductionist therefore, in being consistent, must admit that belief states are caused by the interactions among neurons. It is prior brain states coupled with sensory input which ultimately give rise to a brain state to be identified with some belief state. So far so good. The reductionist will not find this problematic as it is more or less a restatement of her position applied to the specific question at hand, viz. belief states. But, there is a subtle problem here. Let B stand for a belief state (brain state) and N be its various neurological causes. In virtue of what does N cause B? Surely, it is in virtue of N's physical properties. For example, perhaps part of N is the firing of a particular neuron leading to part of B which is the firing of another neuron. If neuron 1 causes neuron 2 to fire, this happens because of the various properties of the key components of neural transmission.

Neuron 1 releases a chemical called a neurotransmitter. The neurotransmitter diffuses across a synapse and binds to a protein channel on neuron 2.³ Afterwards, this allows the influx of sodium ions into the cell via rapid diffusion causing a change in the electrical potential of neuron 2. This results in neuron 2 releasing its own neurotransmitter. As we can see from this process, it is because of the chemical properties of the neurotransmitter that the protein channel on neuron 2 opens up. For example, the size, shape, and electrical charges of the various regions of the neurotransmitter dictate how it will interact with the protein channel on neuron 2. The fact that sodium ions move in to neuron 2 upon the opening of the protein channel is a result of the concentrations of these ions in solution. The fact that sodium has an effect on neuron 2 is because of its charge which is a result of how many electrons the sodium has (1 less electron than proton). The electric current which runs through neuron 2 only has an effect on neuron 2 because of other protein channels across the membrane which eventually allow for the influx

3. For those unfamiliar with the technical language: Neurons are cells of the nervous system. They are especially noteworthy for their ability to send and receive information via electrical and chemical signals. A synapse is where two neurons join together (the space between the two neurons is quite small) and this allows for communication between the two neurons usually via chemical signals called neurotransmitters. Protein channels are proteins which are part of the plasma membrane (outer covering) of a cell. When a chemical binds (attaches) to a protein channel, the channel changes shape and opens up, allowing for the passage of various molecules into the cell.

of calcium ions into the cell which in turn interact with vesicles within the cell to allow them to release neurotransmitter to a new neuron. The physical properties of calcium as well as the vesicles are relevant to this interaction. Through and Through this process is dictated by the physical and chemical properties of neurons, their components, and their surrounding ion-filled environment. This process is a snippet but a representative one of the entire causal process whereby N brings about B (see Breedlove 2007 for a textbook introduction to such material).

Typically however, we take it that B is caused by known facts about the world in virtue of their evidential weight in support of the belief in question. For example, perhaps Smith believes Jones to be an alcoholic. Smith believes this because Jones often comes to work late, he has been known to get very drunk at social functions, and he has appeared drunk at work on a number of occasions. Smith's belief is reasonable and justified, and presumably caused by said reasons. The reductionist however must deny this, she must say that Smith's belief is caused by neurological factors in virtue of their physical and chemical properties. This is a rather radical entailment. On reductionism, Smith *does not* believe Jones to be an alcoholic because of the evidence. Moreover, Smith's case is not unique. *No one* believes anything *because of the evidence* in favor of the belief. For example, No one ever believes that Barack Obama is president of the U.S. because of reliable news sources, accurate video footage, or the testimony of any other informed American. In fact, no one believes *reductionism* on account of the arguments in favor of it! (Haldane 1929, 209).⁴ Rather, every person's beliefs are explicable in terms of the neurological causes and their physical or chemical properties but not because of the value of the evidence. Now, if no one believes anything because of evidence or arguments supporting a position, then no one is ever justified in believing anything. To believe something justifiably is to have some reason or warrant for believing what one believes. It may be the case that justification is *available* for certain beliefs, for instance, perhaps there is ample evidence that Jones is an alcoholic. However, no one ever *believes* this fact *because of the evidence*. Thus, even when one has a belief that is *justifiable* it is never *justified* (Lewis 1947).⁵

4. Haldane makes this exact point when he argues that if thoughts are a result of chemistry and not logic, then the belief in materialism is itself unjustified (Barr 2009).

5. I should point out that while C.S. Lewis provides a major influence in the formulation of my argument, his version was developed in a different context. Lewis is specifically concerned with

III. Reductionist Objection

A reductionist may attempt to save her position by attempting to argue that the two are not mutually exclusive. In other words, she may argue that B is produced both by the reasons in favor of holding the belief as well as the neurological factors in virtue of their physical properties. This is not to say that B is overdetermined (as this would be un parsimonious) or partially produced by two distinct causes (as this would go against the entire goal of physicalism). Rather, the reductionist has to somehow identify N with the evidence supporting the belief in question. In making this identification, obviously N is distinct from the evidence as such but N could in theory be identical with the mind's perception of the evidence in question. For instance, one piece of evidence supporting the claim that Jones is an alcoholic is that Jones has been drunk to work. Now, this fact is not in any way identical to a series of neurological factors (N). However, perhaps N is identical to the *mental state* whereby Smith recognizes that Jones has been to work drunk. In other words, we may say that N (or part of N⁶) is identical to the mental state Smith is in where he thinks "Jones has been to work drunk." Consequently, the reductionist can have her cake and eat it too, she can be a consistent physicalist but also hold that beliefs are caused by reasons.

This reductionist response certainly has some *prima facie* appeal. Nonetheless, it misses a crucial point. The problem, as I argued in section II, is not that reductionism must posit a neurological cause for a belief state *per se*. The problem is that neurological causes are causes *in virtue of* their physical or chemical properties. This is not unique to reductionism. *Of course*, neurological causes derive their efficacy from their various physical and chemical properties. No one would deny this. The problem facing reductionists is that the only cause they can admit is a neurological cause and therefore beliefs are produced in virtue of physical and chemical properties of this cause. This *positively excludes* the possibility that beliefs are produced in virtue of the fact that the belief has a justification.

naturalism as a whole as opposed to the specific question of reductionism that I am concerned with. Moreover, Lewis is using the argument in part as evidence for theism, I am not.

6. I add this qualification because perhaps N represents a whole host of factors including sensory inputs, other beliefs, memories etc. Neurological causation is complex and I do not wish to create the impression that it is any simpler than it actually is. However, this consideration is not relevant to the argument at hand.

This holds true even if I grant the reductionist's response above. For example, suppose that N (or part of N) is the brain state identical to the mental state or series of mental states in which Smith recognizes the various pieces of evidence which make Jones appear to have an alcohol problem. Suppose further that N produces B, the brain state identical to the mental state whereby Smith believes Jones does in fact struggle with alcoholism. Now, why is it that N causes B? The reductionist still must admit that it is in virtue of N's physical and chemical properties. What matters is for instance that N includes certain neurons firing containing certain amounts of particular neurotransmitters of various sizes and shapes. What most definitely does not matter is that N is identical to the mental state in which Smith recognizes the evidence in favor of the proposition in question.

The reductionist may retort however: "No, of course N causes B in virtue of its physical properties. That said, it matters that N is identical to the mental state in which Smith recognizes the evidence for the belief that he has because N has the physical properties that it does in virtue of its mental content." This response allows the reductionist to hold the following claims: (1) N causes B, (2) N causes B in virtue of its physical properties, (3) N has the physical properties it does in virtue of its mental content and therefore (4) N causes B in virtue of the mental content, that is, N causes B because N is the mental state in which Smith recognizes the evidence in favor of the belief. As we have already seen, (1) and (2) are entailments of reductionism. However, (3) is what the reductionist needs in order to preserve her position from absurdity and get to (4).

But the retort as stated will not work. Claim (3) is necessarily false. N has its physical properties essentially. If any of N's physical properties were different, it would not exist, some different series of neurological factors or a different brain state would exist.⁷ But since (3) is false, the reductionist cannot arrive at (4) and is stuck at the conundrum she started with.

7. I have to be quite careful here. N only has its physical properties essentially on a *de re* understanding of what N refers to. Initially, I stated that N represents "the cause" of B. However, on a *de dicto* reading, N would represent whatsoever causes B. Either way, in relying on a *de re* reading, my argument is not altered in substance, however readers should be clear on this point moving forward so as to avoid confusion. (On an aside note, my claim that N has its physical characteristics essentially is true on a *de dicto* reading if one holds that B can only be caused by one set of neurological factors, a view which I see as plausible albeit too controversial to rely on for this paper).

A clever reductionist however can satisfy her desideratum for something akin to (4) if she alters claim (3). Suppose instead she posits that the sheer presence of N derives from the fact that Smith recognizes the reasons for thinking Jones is an alcoholic. If this is the case, N's causation of B depends on it having the mental content that it does because N only causes B on the supposition that N is present. Moreover, it is a sufficient condition for the production of B that N have the mental content that it does. Since it has its physical properties essentially, as long as N is present, B will follow.⁸

This move, while clever, does not address the reductionist's problem. For still, N causes B in virtue of its physical and chemical properties. The explanation for the occurrence of B *given* N is still the physical and chemical properties of B. In other words, given Smith grasps the evidence, it still only follows that he has the belief about Jones because of the properties of N, *not* because he grasps the evidence. Sure, Smith has the belief that he does in one sense because he has evidence for the belief. But the connection between the evidence and the belief involves an intermediary which undermines the justification (c.f. Barr 2009).

To see this, let us use a new example. Smith has the belief that Jones is trustworthy. A reductionist may analyze this as follows: Let B' be the belief state, N' be the cause. But suppose now that N' is identical to the mental state which holds that Jones owns a funny Christmas tie. N' may be present precisely because Jones owns a funny Christmas tie, that much is correct. Moreover, the mental content of N' does in some sense cause B' (i.e. the fact that Smith recognizes what tie Jones owns does contribute to Smith's belief). But, since the link between the mental content and the belief is sufficiently loose, it is possible to have this kind of situation. The tie that Jones owns has nothing to do with whether or not he is trustworthy. The mental content causally responsible for Smith's belief is wholly irrelevant to that belief. So *even though* the reductionist is correct (to an extent) in claiming the mental content of N' is causally relevant to the production of B', the connection is not tight enough to secure justification. Justification requires that the mental content that produces the belief is causally connected to the belief in such a way that it only (or at least, under normal conditions) produces the

8. All things being equal. Perhaps N causing B is indeterministic or there are other factors which control whether or not N causes B such as some kind of "free will." These issues however are equally relevant regardless of whether or not one is a reductionist or how one believes N produces B. So technically, it is not correct to say N is sufficient for B *full stop*, but for the reductionist's purposes, it is good enough.

belief if it actually embodies evidence for the belief. As this example shows, if the mental content is causally responsible for belief in the wrong kind of way, it may be right to say that the mental content of brain states produces certain beliefs but it is wrong to say that it does so in virtue of the fact that it contains evidence for the proposition believed. Consequently, it is not appropriate to consider this kind of causal role justification, otherwise, we would have to admit that in the hypothetical situation given, Smith is justified in believing Jones trustworthy on account of his spirited ties.

The only final move a reductionist can make is to claim that such a hypothetical scenario is *impossible*. The reductionist may reason as follows:

1. Situations like the second Jones case in which the mental state causing the belief doesn't contain evidence for the belief are impossible or very unlikely
2. If stories like the second Jones case are impossible or very unlikely, under ordinary circumstances, the cause of a belief state is a previous mental state embodying evidence for the proposition believed
3. If ordinarily, the cause of a belief state is a previous mental state embodying evidence for the proposition believed, then beliefs can be justified
4. Therefore, beliefs can be justified

The reductionist's line of thinking here seems to focus on the impossibility of the second Jones story. If such a story cannot happen, then we need not worry. If our beliefs are consistently produced by mental states embodying evidence for the proposition believed, then we are justified in our beliefs. However, the reductionist is incorrect to think that (1) is the controversial premise. Of course, if the scenario delineated above is possible or highly likely, this certainly undermines the possibility of justification for reasons enumerated. But the point of the example was to *illustrate why even when* the cause of a belief is a mental state containing evidence for that belief it is still not justification.

It may be the case that given our laws of physics plus evolutionary history, mental content is usually correctly paired up with belief states. But this wouldn't matter. What is doing the work in my argument is *not* the possibility of such a strange scenario. Rather, the work is done by the fact that the way in which N' and B' are associated is not one in which the fact that the mental content associated with N' evidentially supports the belief associated with B.' So even though the mental content is in some sense causal, it does not justify the belief. The possibility of such a strange scenario like the one with Jones's tie follows from the problem with reductionism, not the problem following from the possibility. To go back to the original example which is surely possible, Smith is still not justified in believing that Jones is an alcoholic even though N produces B and N is associated with the right kind of mental content. In that scenario, even though Jones coming to work drunk consistently causally produces Smith's belief that Jones is an alcoholic, it does not do so in such a way so as to be considered justification. This is because the evidence of Jones coming to work drunk has no effect on Smith's belief *qua* evidence for the claim. Therefore, I take it that the problem in the reductionist's argument is not premise (1) necessarily but premise (3). It is not sufficient for justification that beliefs are reliably produced by mental states containing evidence for the beliefs. It is also necessary that they be produced *because* the evidence is *evidence for the proposition believed*.

Notice an additional problem with the reductionist's line of thinking here. In order to believe (4), the reductionist must believe (1). Now, I granted that perhaps the reductionist is correct in her thinking that premise (1) is true. Maybe strange scenarios like the one with Jones and his Christmas tie are impossible given the way in which brain states derive their mental content. Or maybe they are simply very unlikely given evolutionary history and the way in which certain brain states got associated with certain behaviors and therefore beliefs.⁹ Whatever the basis for the truth of (1) is, it need not concern us, I am sure reductionists can offer many interesting accounts. What is important here however is this: can the reductionist be *justified* in believing (1)?

To be justified in believing (1), a reductionist must be justified in believing that we can form justified beliefs. For the ability to believe (1) justifiably presupposes

9. On the other hand however, an influential argument against physicalism and more broadly naturalism has been provided by Alvin Plantinga to the effect that natural selection alone is not sufficient to equip the human brain with truth-detecting abilities (Plantinga 2011).

that it is possible to form justified beliefs. Therefore, in order to believe (1), the reductionist must believe (4). But in that case, (1) cannot be used as a premise in support of (4), otherwise, this would be question begging. Consequently, the reductionist cannot offer a non-question begging argument for the conclusion that we may be justified in our beliefs on the basis that the Christmas tie scenario is impossible.

Now, does this problem face non-reductionists? For don't we simply assume we can be justified in forming beliefs regardless of which theory of mind we espouse? For example, I assume that my senses are generally reliable and I am not a brain in a vat. But, I do not have a good argument for this conclusion that is not question begging. However, I don't take the skeptical scenario seriously, I dismiss it and it is axiomatic for me that I can form justified beliefs. I think that there however is a difference between what the reductionist is doing and what an ordinary person is doing when rejecting skepticism. The ordinary non-skeptic is assuming that things are the way they appear unless greater evidence is presented otherwise. I am assuming my senses are reliable because they seem to be and barring evidence to the contrary, this assumption is practically useful and a good starting point for any epistemic stance. The reductionist however is assuming her position can account for the fact that we can be justified. The ordinary non-skeptic reasons according to the following steps:

5. I can form justified beliefs (axiom)
6. If my senses are not at all reliable, I cannot form justified beliefs
7. Therefore, my senses are (sometimes, typically, ordinarily) reliable.

The reductionist however is reasoning with these steps:

8. I can form justified beliefs (axiom)
9. If the Jones tie scenario is possible and reductionism is true, I cannot form justified beliefs

10. Therefore, either the Jones tie scenario is impossible or reductionism is false (from 1-2)

11. Reductionism is true (premise)

12. Therefore, the Jones tie scenario is impossible.

But notice, for the reductionist, the premise (11), cannot be justified unless we assume that (12) is true. But if a defense of (11) is predicated on the acceptance of the conclusion, then the argument is question begging. The reductionist's only argument then is to take (11) as an axiomatic starting point, much like the non-skeptic and the reductionist take (5). But now, the difference between the ordinary non-skeptic and the reductionist is quite apparent: the ordinary non-skeptic starts with the assumption we can form beliefs and treats this as a starting point not in need of a defense. However, the reductionist starts off with this *and* reductionism and assumes that it needs no defense! But reductionism is controversial, by no means the only theory of mind, and something which can either be defended or objected to by arguments. It is not a candidate for an axiom. Therefore, the reductionist is doing something quite different than the ordinary non-skeptic. She is simply begging the question.

Let us recap. First, the reductionist may respond to my initial argument by claiming that N's causing B is in some way dependent on the mental content of N. In order to do this, the reductionist must claim that the presence of N depends on it having the mental content that it does. If this is the correct analysis, then reductionists are right in saying that the content of the mental state which causes a belief is causally responsible for the belief. However, the mental state is still not a cause of the belief *in virtue* of it containing evidence which supports the proposition believed. This is problematic because it entails we cannot truly be justified in believing anything. This opens up the possibility of mental states causing belief states which are completely irrelevant to the evidence considered. Even if such an alleged possibility is in fact very unlikely due to the way in which mental states derive their intentional content, the reductionist cannot defend this position in a non-question begging manner. To conclude, reductionism entails we are never justified in believing anything. However, since we *are* justified in some

of our beliefs, it follows that reductive physicalism is false and mental states are not identical to brain states.

IV. Implications

In section I I introduced reductive physicalism. Physicalism claims that the brain is wholly responsible for human cognition, there is nothing more to the mind than the brain. Reductionism is a kind of physicalism which attempts to explain the relationship of the brain to the mind by arguing the two are in fact the same thing considered under different descriptions, that is, they are identical. However, in section II, I argued that if this were true, then our beliefs would be causally produced on account of the physical or chemical properties of preceding neurological factors rather than on account of the evidence in favor of the propositions believed. Since this would undermine the idea that humans are ever *justified* in believing anything, which we are, I argued that reductionism is false. In section III, I considered a potential move the reductionist could make by attempting to identify the neurological causes of belief with mental states associated with grasping the evidence in favor of that belief. I pointed out that while this is a clever move, it ultimately fails for the same reason that any reductionist account will fail. That is, the *cause* of a belief if reductionism is true is a cause *in virtue* of its physical properties *rather than* its association with the evidence in favor of the belief. Consequently, if reductionism is true, no belief is ever had by a person because evidence favors the proposition believed. This entails that no one is ever justified in believing anything, an absurd and self-refuting position. Hence, reductionism is a false theory of mind. In the words of Biologist J.B.S. Haldane, "If my mental processes are determined wholly by the motions of atoms in my brain, I have no reason to suppose that my beliefs are true ... and hence I have no reason for supposing my brain to be composed of atoms" (Haldane 1929, 209).

If I am correct, then in philosophy of mind, we are left with two main positions. The first would be a kind of dualism. On dualism, the mind is said to be composed of both physical parts, i.e. the brain, and non-physical parts or properties. On the other hand, one may opt for a non-reductive physicalism. Non-reductive physicalists attempt to explain how the brain *produces* the mind but is distinct from it. What this paper hopefully shows however is that beliefs cannot be justified if their cause is not intimately linked to the evidence in favor of the proposition believed in the right kind of way. In order to construct a theory which has this

feature, philosophers will do well to recall why reductive physicalism fails. It fails not merely because beliefs have physical causes, but because the causes are causes because of their physical properties rather than evidential properties.

Finally, to conclude this paper, it is necessary to connect what I have said to contemporary neuroscientific thinking. In many ways, the philosophy of mind helps serve cognitive and biological based neuroscientific approaches by constructing a framework within which the discipline can proceed. Neuroscience must assume at the outset that the brain and mind are interconnected in a very unique and profound manner. To reject this would be to reject the entire foundation of neuroscience. Adopting a crude version of Cartesian dualism by which our beliefs are caused by reasons in our mind and the brain ultimately plays no role, or only the role of a sensory machine, is bound to be problematic. It cannot account for the complex interaction of our thoughts and behaviors as well as the evolutionary side to our cognitive abilities. On the other hand, as I have argued in this paper, if we accept a dominant paradigm which identifies neural states with cognitive states, the entire enterprise will be undermined as well albeit in a different way. If mental states and brain states are identical, we are never justified in believing anything, including any claim delivered to us by contemporary neuroscience. Therefore, this extreme as well could undermine the discipline.

In conclusion, I hope to have advanced the discussion in philosophy of mind in my paper. Additionally however, I hope to add a positive insight into the field of cognitive neuroscience. In developing a theory of mind, it is first important to reject at the outset any position that undermines or eliminates the very mind in need of an explanation. This is what reductive physicalism does. It defeats the possibility of justified belief and consequently, cannot be positively assumed in doing any research in theory of mind. Another implication of my paper on cognitive neuroscience is this: it should help direct how those who study the mind and brain ask certain questions. The approach cannot be one which assumes when we understand the brain and the functional relationships of brain states we understand the mind. Rather, cognitive neuroscience must ask *how is it* that the brain produces the mind? Or alternatively, if the mind is not produced by the brain, what does produce the mind? And how would an external mind not produced by the brain come to be or continue to be so intimately causally linked to the brain? These are questions which are beyond the competence of modern neuroscience, however, the approach is necessary if consciousness and thought

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are to be fully understood. What this illustrates is that philosophy and science must be in communication to form a coherent and complete picture of what the world is like. If this paper does nothing else, I hope to do that.

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compos mentis

Insidious Illness: A Criticism of Medical Reductionism

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ABSTRACT

What is the best way to understand 'illness'? One step toward answering this question is to first establish which ways one must not understand 'illness.' The paramount target for criticism is the reductionist account of illness. In this paper, I will first address conceptions of illness and disease as articulated by Christopher Boorse; K. Danner Clouser, Charles M. Culver, and Bernard Gert; and Roberto Mordacci and Richard Sobel. I will then offer my criticism of the reductionist account of illness, arguing that such an account strips the ill individual of their autonomy, thereby rendering their experience of illness meaningless, and subjecting them to stigmatization from both medical experts and the public. I then address the social implications such an account entails, the legitimization of the institution of medicine, and the delegitimization of the individual's perception of social injustice. I conclude by opting instead for a holistic account of health, disease, and illness.

KEYWORDS

Boorse, Clouser, Culver, Gert, Mordacci and Sobel, Reductionism, Malady, Disease, Illness, Narrative, Health, Social Model, Medical Model, Normalcy, Stigmatization

Introduction

What is the best way to understand 'illness'? One step toward answering this question is to first establish which ways one must *not* understand 'illness.' The paramount target for criticism is the reductionist account of illness. In this paper, I will first address conceptions of illness and disease as articulated by Christopher Boorse; K. Danner Clouser, Charles M. Culver, and Bernard Gert; and Roberto Mordacci and Richard Sobel. I will then offer my criticism of the reductionist account of illness, arguing that such an account strips the ill individual of their autonomy, thereby rendering their experience of illness meaningless, and subjecting them to stigmatization from both medical experts and the public. I then address the social implications such an account entails, the legitimization of the institution of medicine, and the delegitimization of the individual's perception of social injustice. I conclude by opting instead for a holistic account of health, disease, and illness.

Disease and Illness

In "On the Distinction Between Disease and Illness," Christopher Boorse argues against the idea that the concept of 'disease' involves value-judgments, and argues for the idea that there is an objective and autonomous framework within which 'disease' may be defined. He is therefore wholly against the normativist accounts of disease, both strong and weak.

The strong normativist view regards undesirability and disapproval as being both necessary and sufficient conditions for a given condition being labeled a disease, while the weak normativist view holds that value-judgments are only necessary conditions for a condition being considered a disease. Boorse argues against both, claiming that they both imply the consideration of disease as contrasted to health as an ideal, where this ideal is deified and Platonic, like holiness or virtue, and built into which is the notion that this ideal is intrinsically desirable; however, says Boorse, "[t]here are normative and nonnormative ideals" (Boorse 2004, 80). Health, he argues, is a non-normative ideal. So, he claims, there are two concepts of 'health': one being descriptive, objective and non-normative, with the other being mixed, involving both evaluative presuppositions as well as descriptive content.

Boorse then distinguishes 'disease' and 'illness' by defining the former as a theoretical notion, and the latter as a practical notion. Further, disease

is understood to be the genus of which illness is a species. Disease, and the theoretical conception of its opposite, 'health,' are applicable across species and are free of any normative content or value-judgments. Disease for Boorse is something which is objectively definable by comparison with what is characteristic of the species at large, or what is considered 'normal' for the fulfillment of the functions and goals typical of a given species, as well as of each individual organ or bodily system of a specimen of such a species. According to Boorse, each of these physiological components functions in a certain, 'normal,' way in order to fulfill its end, and collectively these "physiological functions tend to contribute to all manner of activities neutrally" (Boorse 2004, 83). So, health is considered to be that condition of an organism in which each of its organic components are fulfilling their ends, thus allowing for the organism's capacity to meet "higher level goals such as survival and reproduction" (Boorse 2004, 82). That is, health is what is in alignment with an organism's natural function. Diseases are then objectively undesirable insofar as they interfere with this natural function.

Illness and its opposite, 'wellness' are those terms which are both descriptivist and normative.¹ Hence, any species of living thing may be diseased, in that some one of its biological functions is obstructed. But only human beings may be ill or well, as only human beings make value-judgments which conceive a certain disease to be undesirable; and this attitude towards an undesirable disease necessitates the action to cure or remove the illness. An illness, for Boorse, is a disease which

is serious enough to be incapacitating, and therefore is (i) undesirable for its bearer; (ii) a title to special treatment; and (iii) a valid excuse for normally criticizable behavior... (Boorse 2004, 84)

He likens this distinction between disease/illness to concepts like untruthful/dishonest: in certain contexts, the objective condition of being untruthful takes on, or sheds, the connotations that 'dishonest' implies, "as when the Gestapo inquires about the Jews in your attic. Here the untruthful house-holder will not be

1. Boorse uses 'health,' in both a theoretical and practical sense to denote the conceptual opposites of both 'disease' and 'illness,' respectively. I will use 'wellness' as an equivalent for Boorse's 'practical health,' to denote the conceptual opposite of illness, in order to avoid confusion between the two senses of 'health' Boorse defines.

compos mentis

described as speaking dishonestly” (Boorse 2004, 84). Likewise, diseases may be considered to be either illnesses or simply diseases depending on whether it is more beneficial to conform to the species-design or to deviate from it.

Boorse then turns his attention to mental illness. He grants that even if “mental conditions usually called pathological are in fact unhealthy,” i.e., that these conditions are the result of malfunctioning psychological processes, it is still not the case that these conditions—or diseases—are illnesses as he conceives of illness (Boorse 2004, 84). Against the first criterion, he argues that:

[T]o evaluate the desirability of mental health we can hardly avoid consulting our desires; but in the mental-health context it could be those very desires that are judged unhealthy. (Boorse 2004, 85)

Because one must find the condition undesirable, and because mental illnesses themselves are often distortions of what one desires, it is not possible for a psychopathological condition to meet this criterion of ‘illness’

Against the second criterion, he argues that because it is possible that cultural/environmental circumstances can injure or disease entire societies, it is *possible* for disease to be universal within a society, thus failing to fulfill the illness-criterion that “not everyone can be ill” (Boorse 2004, 86). Boorse argues that it is theoretically possible for an entire population to be affected by environmental factors to such an extent that it’s possible, as a result, for that population to exhibit paranoia, for example, and for that paranoia to be statistically normal, yet remain a disease, as it is the product of environmental causes:

A statistically normal condition, according to our analysis, can be a disease only if it can be blamed on the environment. (Boorse 2004, 86)

Boorse argues, however, that even if empirical research showed this possibility to be manifest within a given population, it would constitute an illness “only by abandoning one of the presuppositions of the illness concept: that not everyone can be ill” (Boorse 2004, 86). Thus, mental illness fail to meet his second illness-criterion.

Against the third criterion, Boorse employs the Aristotelian understanding that, even if unconscious processes are claimed to explain deviancy, those

unconscious processes and desires are still the result of the agent's conscious choices and actions. As says Boorse:

Strictly speaking, mental disorders are disturbances of the personality. It is persons, not personalities, who are held responsible for actions, and one central element in the idea of a person is certainly consciousness. This means that there may be some sense in contrasting responsible persons with their mental disease insofar as these diseases lie outside their conscious personalities...[However,] [u]nconscious ideas and wishes are still *our* ideas and wishes...They may have been conscious at an earlier time or be made conscious in therapy, whereupon it becomes increasingly difficult to disclaim responsibility for them. It seems quite unclear that we are more responsible for many conscious desires and beliefs than for these unconscious ones. (Boorse 2004, 86-87; emphasis in original)

Because the mind is the "very seat of responsibility" (Boorse 2004, 86) for moral behavior, it is not so obvious that mental illnesses account for and excuse one's immoral behavior. One has no agency over the functioning of one's bodily organs or cells, but it seems impossible for one not to have control over the faculty which is responsible for decisions and self-control itself. Therefore, granting that pathological mental conditions are indeed diseases according to Boorse's view, mental illnesses yet fail to fulfill the third of Boorse's criteria and so are not considered to be proper illnesses at all.

Malady

In "Malady: A New Treatment of Disease," Clouser, Culver and Gert set out to define the genus of which 'disease,' 'illness,' and 'injury,' among others, are species. They argue that this genus is 'malady.' According to Clouser et al.:

[a] person has a malady if and only if he or she has a condition, other than a rational belief or desire, such that he or she is suffering, or at increased risk of suffering, an evil (death, pain, disability, loss of freedom or opportunity, or loss of pleasure) in

the absence of a distinct sustaining cause. (Clouser et al. 2004, 101)

That is, a condition would count as a malady so long as the suffering is internal to the person, and is not easily remedied. For example, if one experiences pain as a result of being slapped on the back, one does not have a malady. However, if one experiences pain as a result of arthritic inflammation, then the cause is internal, "biologically integrated...[and]... not easily removable," (Clouser et al. 2004, 96) and so is considered to constitute a malady.

Clouser et al. then claim that what unites the causes of suffering, "evils," is that "no one wants them...Thus, what unites death, pain, and disability is the attitude that people take toward them" (Clouser et al. 2004, 93). Here, 'evil,' one of the key elements of 'malady,' is defined by how people perceive and avoid it. This emphasis on attitude, the role that abnormality, and consequently relativistic value-judgments serve in defining what constitutes 'disability,' 'increased risk,' and 'loss of pleasure/freedom,' seems to undermine the objectivity that Clouser et al. tout for their definition of malady.

With regard to what constitutes 'disability,' 'increased risk,' and 'loss of pleasure/freedom,' Clouser et al. have recourse to abnormality. They define 'disability' as the loss of an ability that is typical of the species during its prime stage of maturity. So, a man aged ninety-nine who no longer can walk is considered disabled since at some point in the past (in his prime) he had the ability to walk, but no longer does (Clouser et al. 2004, 97). 'Increased risk of suffering' is defined as a condition which makes one more likely than a 'normal specimen' of the species to suffer harm.² They again define it in comparison to the species' norm rather than in comparison to that individual's previous state, since it's possible for an Olympic athlete to be less fit than they were previously, and so at greater risk than they were before; but in comparison to the rest of the population, they still have above-average health and so are not considered to be at increased risk. 'Loss of pleasure/freedom,' is defined as the restriction of one's choices which is not a result of external, sustaining circumstances/causes. So, a prisoner is not suffering loss of freedom due to a malady, but due to distinct sustaining causes. However, one who is unable to eat peanuts, unable to touch cats, or one who

2. Examples of this would include high blood pressure, high cholesterol, and other such conditions.

is disfigured and so cannot participate in certain activities, is subject to loss of freedom/pleasure as a result of their condition.

The authors claim that this definition is universal and objective, yet which allows for a certain degree of cultural relativity/value-judgment with regard to certain understandings of the components of the definition, in that it relegates abnormality to an indirect role in determining what a malady is, since it is used in deciding what constitutes disability or an increase in the risk of suffering, but not 'malady' directly and as a whole (Clouser et al. 2004, 101). However, if abnormality is used to determine the nature of each class of evils, it remains to be seen how this definition is as objective as Clouser et al. claim.

Another issue with 'malady' is that it requires that one's suffering must be due to a condition which is not a rational belief or desire (Clouser et al. 2004, 94). That is, anybody will avoid all evils, "unless they have some reason not to avoid them" (Clouser et al. 2004, 94). So, if one has a reason to endure pain or death (to save a loved one's life, for example), one is not considered to have a malady in this sense. A question prompted by this conception of malady is: what is considered 'rational'? This term seems to betray another aspect of this definition which is dependent upon, or at least vulnerable to, a value-judgment regarding what constitutes a reason or rational belief.

Let's recall the proposed definition:

[a] person has a malady if and only if he or she has a condition, other than a rational belief or desire, such that he or she is suffering, or at increased risk of suffering, an evil (death, pain, disability, loss of freedom or opportunity, or loss of pleasure) in the absence of a distinct sustaining cause. (Clouser et al. 2004, 101)

If what constitutes a rational belief/desire is subject to value-judgment; if being "at increased risk of suffering an evil" is determined with reference to the concept of abnormality; and if the very nature of all the "evils" elucidated by Clouser et al. are all determined by the agreement of attitudes of "all rational persons," (Clouser et al. 2004, 101) with 'rational' being under dispute: then it seems clear that this definition is either normative, or at least intersubjective. In either case, it appears not to be as objective as its authors would hope.

Criticism aside, this new genus (malady) of 'disease' and 'illness' encompasses a wider scope than did Boorse's notion of 'disease,' while still attempting to allow for objective definition of what constitutes a disease, illness, injury, etc. With all of these terms contained within a single genus, with the result that disease and illness are distinct and independent from one another, although they may overlap. Boorse disagrees with this concept of malady since "its basic elements, concepts, principles, and arguments are the same when applied to mental maladies as to physical ones" (Clouser et al. 2004, 102). That is, 'malady' allows for mental and physical diseases, illnesses, etc., all to exist on the same plane, whereas Boorse questioned "whether current applications of the health vocabulary to mental conditions have any justification at all" (Boorse 2004, 78).

Health and Meaning

In "Health: A Comprehensive Concept," Mordacci and Sobel claim that health is something which is unable to be defined wholly in descriptive terms, but must instead encompass the values attached to it. This is necessary, they claim, because health is something desired and valued, so the definition of health must account for why it is valued. The authors seek to avoid both strictly descriptivist as well as strong normativist accounts of health, opting instead for an account which includes both descriptivist, biopsychological understandings of health and disease, and also which provides the necessary tools for the patient to make sense of their condition. Mordacci and Sobel argue that

[t]he existential, moral, and symbolic dimensions of the experience of illness must be addressed as challenges the patient is required to face with his cultural, personal, and religious resources. (Moradacci and Sobel 2004, 106)

A person's sense of the meaningfulness of their health, disease, or illness is vital to sustain the will to live, in conjunction with scientific treatment.

They cite as an example of the importance of a holistic view of health a terminally ill patient who seemed (biologically) the same the day he died as the day before he died, stating that at each point the patient had been in the same condition descriptively, with the only difference being that, on the day he died, he had lost his will to live (Mordacci and Sobel 2004, 106-107). From this they argue that *attitude* plays an equally important role in somebody's health as physiological

treatment. Here again is the inclusion of attitude as being a decisive factor in determining the nature of health, disease and illness. Yet, in this case it is not an indirect, but a direct and explicit contributing factor in the state of human health. Where Clouser et al. conceived of attitude as the principle uniting the “evils” which then played a part in defining maladies—and by extension diseases and illnesses—Mordacci and Sobel stress its status as an independent factor of health, *alongside* physiological factors, rather than as a necessary condition for defining them.

The conception of health from the perspective of the Medical model views health as an end in itself. However, Mordacci and Sobel argue that health is not only an end, but a means to achieving the ultimate end of plenitude (Mordacci and Sobel 2004, 105-106). Therefore, they argue, health is not only the quiet functioning of organs, but is the possession of the will to live and to make sense of one’s life. This they call a “life narrative” (Mordacci and Sobel 2004, 105-106).

Health, then, is the “possibility of blossoming” (Mordacci and Sobel 2004, 105). It is something which is never separate from the person and which has a dynamic nature: a past, a present and a future. It is important for medical professionals to at least be aware of our desire for health, in order to help the patient. Mordacci and Sobel claim that technical answers are only part of the solution, and that an ability to face the existential dread of illness and to make sense of one’s life, health, and illness, is equally important for any biological treatment. Doctors who are unable to do this (mostly in the West) are unable to truly help a person. They then recapitulate the commonly held notion that health is the “silent functioning of organs” (Mordacci and Sobel 2004, 106) and that it is something not directly experienced, but is rather the absence of malady. ‘Malady’ they use to cover both illness and disease (Mordacci and Sobel 2004, 106).³ Malady, they claim, is not incompatible with health, as the two coexist almost all of the time. Mordacci and Sobel thus reject the genus-species relationship that Boorse posits between disease and illness: “One can be ill without being diseased, diseased without feeling ill, or both ill and diseased” (Mordacci and Sobel 2004, 106). A person can be ill (depressed, anxious) and yet be biologically and theoretically healthy, or physically diseased, yet happy and contented.

3. ‘Illness’ for Mordacci and Sobel refers to “first-person” suffering, whereas ‘disease’ refers to the “third-person” ability to codify and diagnose the cause of the suffering (Mordacci and Sobel 2004, 106).

Illness, then, is something which causes us to lose trust in the idea of plenitude, or the good life (Mordacci and Sobel 2004, 107). The sick person loses the feeling of coherence and thus the ability to act freely; and it is this “confidence that things will work out” that contributes to one’s health and sense of well-being (Mordacci and Sobel 2004, 108). Not only physiological, but cultural, personal, social, etc. factors contribute or detract from this sense of coherence and meaningfulness. They therefore posit the existence of pathogens and salutogens, the former being things which cause or worsen maladies, the latter being things which promote health. Each is not strictly biological but encompasses both biological/psychological factors as well as everyday-experience factors, such as having a good living arrangement, not drinking to excess, etc. These conceptual categories (pathogens/salutogens) thus increase dramatically the scope of factors which contribute to or deteriorate the health of an individual.

Where Clouser et al. posited ‘malady’ as the genus to encompass Boorse’s ‘disease’ and ‘illness,’ Mordacci and Sobel now posit pathogens to encompass all those things which

may cause or worsen maladies or may affect health independently of any influence on malady... (Mordacci and Sobel 2004, 107; emphasis added)

For Boorse, illness is a species of disease; for Clouser et al., illness and disease (as well as all other terms such as ‘injury’ or ‘lesion’) are overlapping species of maladies; for Mordacci and Sobel, illness, disease, and health all coexist and are not subordinate to one another, but constitute a plurality across physical, mental, social, personal, etc. planes, the appropriate balance of which is the achievement of health.

Implications of a Reductionist Conception of Illness

Disease, for Boorse, is the body’s deviation from the functioning normal and characteristic for the species at large. Illness is a disease severe enough as to be so undesirable that it is sought to be cured and over which the sufferer has no direct control. Disease and illness, for Clouser et. al, are maladies which *may* manifest themselves, in the first case, as discoverable entities with physical etiologies but without any symptoms (although they lead to symptoms), and in the second case, as symptoms only. Illness for Mordacci and Sobel is that poverty

of meaning which deteriorates the patient's will to live, and which is not reducible to a physical condition like Boorse's 'disease.' Boorse's conception of illness and disease, from the viewpoint of both Clouser et. al and Moradacci and Sobel, appears to ignore the fact that correlation does not imply causation: an illness and disease may overlap, but the presence of disease is not a necessary condition for the presence of illness.

What then is the best way to understand 'illness'? One step toward answering this question is to first establish which ways one must not understand 'illness.' The reductionist account of illness seems to me to be an important target for criticism.

If illness is only a subclass of disease, then symptoms, the first-person experience of being ill, are characteristics of that disease, not the person. If one has a terminal illness and so suffers depression because of how this affects one's life, a reductionist account would mean that that depression—a symptom—is directly caused by the disease, and that in fact that whole experience of the terminally ill is only the expression of disease. So, the reductionist would seek to eliminate this disease and by extension the illness, thereby restoring the patient to their former selves.

This means that the treatment and the problem will always be physiological, with all symptoms serving only as indicators of a disease presence. This seems to imply that the ill person is not themselves until having been cured, consequently discrediting their reports of suffering. Symptoms, then, are not only reduced to manifestations of some more ontologically robust disease-entity, but are thereby seen as somewhat unreliable. If the symptoms a patient reports are not to be trusted because they are 'not themselves,' then it seems that doctors can, or even should, ignore such reports of suffering, taking them to be nothing more than a sign that something must be wrong. This not only reduces illness to disease, but reduces the experience of persons to expressions of malfunctioning organisms. There is then a loss of self. An ill individual, on the reductionist model, seems not to be anyone at all. They are thereby dehumanized and reified as expressions of disease or abnormality.

The dehumanization of patients, and their being reduced to expressions of disease or illness, has at least two important implications for the patient: [1] it renders the patient powerless, and [2] it perpetuates stigmatization.

[1] When a patient is ill, they often do have some sort of biological malfunctioning which serves to cause pain or at least discomfort, and over this malfunctioning they do not have direct control. However, this is not to concede to Boorse's reduction of illness to disease. A patient, when ill, has lost control of their body—or, rather, their body has lost the ability to control itself. But this need not imply that the patient has lost control of themselves. The self and the body are not one and the same, though a reductionist account would imply as much. When a doctor only treats the disease, disregarding symptom-reports only as signs *that* something's wrong, rather than as reports of what the patient is experiencing, they strip the patient of their sense of self. When a patient loses their ability to say anything meaningful, because of their perceived displacement caused by the disease, they are indirectly encouraged to surrender to that perception, and by extension, to surrender themselves to the disease.

This surrender opens up a further problem. When the patient has lost their autonomy, there is no reason for them to do anything apart from what they are told by the medical experts. If they are unreliable and diseased, they cannot trust themselves to make the right decisions in regard to their pursuit of recovery. But this raises the question: if a patient does not follow the medical advice they are prescribed, is this decision made by the person or an error caused by the disease? It would seem to be the latter, if the person is stripped of their autonomy; but it often happens that patients are chastised for their failure to follow the doctors' orders. But if a patient is not themselves, and is victim to the expressions of their disease, chastisement is unnecessary and inappropriate. If autonomy is stripped, it seems impossible to expect the patient to choose to follow medical advice.

However, the alternative seems to be complete control of the patient by medical professionals, whether that is coerced surgery, pharmaceutical treatment, or hospitalization. In these cases, the method of treatment seems to fit the supposed loss of patient autonomy: 'they can't control themselves because they are diseased; therefore, we will control them until we cure the disease and restore them to their old selves.' The logic is now consistent with reductionist accounts of illness. However, this grants sovereignty of the medical profession over the patient and all those it deems diseased. It also trusts the medical experts to recognize when the patient is back to their old self again. Because symptoms may be used as *signs that* indicate something's wrong, rather than as *reports of* what the patient experiences, it's not clear that the remedy of physiological malfunction

will, in the professional's eyes, strictly correlate with the restoration of the patient's 'old self.' Therefore, the medical experts may not have any gauge with which to determine whether the patient is indeed cured and restored to autonomy.

The power the medical profession gains through such control of the patient also poses the problem of expertise: if the medical profession has a monopoly on the knowledge which defines 'disease' and 'illness,' and if all 'ill' patients are subject to such modes of treatment as mandatory hospitalization, coerced surgery, pharmaceutical treatment, etc., then theoretically the medical profession can deem any sort of behavior or person as 'ill' and thereby exercise its sovereignty to control them. This sort of power, as Peter Conrad says, serves to legitimize the "depoliticization of deviant behavior," as well as to

[divert] our attention...from seriously entertaining the idea that the 'problem' could be in the structure of the social system.
(Conrad 2004, 160)

If the medical profession has the authority to define all medical diseases, and if all illnesses are disease, they thereby have authority to define all sorts of illnesses. And because illnesses are those diseases which are so severe as to impinge upon the conscious experience of the patient, the medical profession thereby has authority to determine what experiences anybody should or should not have. And if one has experiences deemed unhealthy, then one will be subject to coerced 'treatment.'

[2] Such dehumanization of the ill patient, coupled with the power-monopoly of the medical profession, inevitably contributes to and perpetuates the stigmatization of all ill and diseased individuals. If the ill patient is no more than the expression of the disease they carry, and if illnesses are by definition those diseases which are so undesirable that all measures must be taken to eliminate them, it's clear to see the types of attitudes that will be taken toward anybody who is deemed as ill. The ill patient, reduced to disease and stripped of autonomy, is seen as an affliction on society, avoided by all who are not ill. This avoidance, and the attitudes the ill patient is met with, all constitute the stigmatization of the state of illness.

If the patient is seen as 'not themselves,' they are, in a sense, objectified through their being reduced to the state of their disease. In this case, they may be pitied or patronized, but almost always largely ignored and avoided. There is a

sense that the ill person is contagious in all circumstances, regardless of whether their disease really is so. Because the symptoms of the ill patient are seen as signs of something wrong, it seems that there's the idea that everything the ill patient says has the potential to contaminate 'healthy' persons. Nobody wants to hear the complaints of the ill, because they are the ramblings of a diseased, effectively self-less individual. When symptoms are no longer words, but treated as *signs* of disease, just as swelling or fever are signs of infection, there is projected this strange aversion to the reports of the ill as though they are contagious. In reducing the patient's illness to disease, and by being stripped of their autonomy, their words now mean nothing to themselves—and to everyone else, they mean only 'stay away.'

But the stigmatization reaches further than this. Because of the disconnect between the general public and the medical professionals, and because of the monopoly of knowledge the latter holds, most are unaware of how the patient is perceived in the medical community. Most, for example, would not know that the patient is seen, in the eyes of the medical professionals, as the expression of a disease, no longer their old self. Most would certainly not know that this perception effectively renders the patient powerless, and encourages them to see themselves as invalid. So, it is not uncommon for ill individuals to be 'chastised' for their incompilance with medical orders, as was discussed earlier. Because most see the ill individual as still possessing autonomy, the latter is often confronted as being 'lazy,' 'irresponsible,' or 'rebellious' by those who do not see them only as their illness. So, often the ill individual is either chastised or ignored: in both cases they are stigmatized.

The implications of a reductionist account of illness are apparent. In reducing an ill person to their functional abnormalities, medical professionals indirectly encourage the patient to surrender their identity to the disease, consequently muting their sense of self, which may negatively impact their will to live. In addition, this mentality inculcated within the ill patient undermines any credibility their illness has within the eyes of others, and any meaning they derive from their own experiences. Their words carry no meaning for themselves, and hardly any meaning for others. They are turned into walking diseases which others actively avoid. The patient is wholly reliant on the medical professional to 'fix' them. This mentality generally contributes to the conferring of immense amounts of power to the medical profession, thereby delegitimizing any dissatisfaction

an individual may have with its structures' or institutions' methods, policies, or organizations. Anyone who sees injustice in the way a society is run may be deemed 'ill' and forcibly subjected to 'treatment,' effectively granting the medical profession full control over a society's inhabitants.

Conclusion

It is clear then why a reductionist conception of illness, and by extension, health, is insufficient for, and even dangerous to, a society whose denizens value freedom, autonomy, and meaningfulness. A better alternative account, I think, would be one in accordance with Mordacci's and Sobel's, one which embraces the plurality of factors which contribute to a well-lived life, conceiving them to be holistic elements rather than as ranked in a hierarchy. Meaningfulness is vital to well-being, and cannot be eliminated or reduced to what it is not without harmful consequences.

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