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# Falling a House of Cards: Rediscovering a Humanist Language in an Age of Neuroreduction

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FALLING A HOUSE OF CARDS:
REDISCOVERING A HUMANIST LANGUAGE IN AN AGE OF NEURO-
REDUCTION



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# Contents

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# Introduction

"The problems are solved, not by coming up with new discoveries, but by assembling what we have long been familiar with. Philosophy is a struggle against the bewitchment of our understanding by the resources of our language."

Ludwig Wittgenstein *Philosophical Investigations* §118

The cleverly titled BRAIN Initiative, short for Brain Research through Advancing Neurotechnologies, is a recent pledge by Pres. Barak Obama to invest $100 million dollars annually to neuroscientist with the aim of bettering our understanding of how "we think, learn, and remember" (Brain Initiative). This pledge rides the crest of a rapidly growing field, where recent technological innovations such as scanning technologies have created entirely new paradigms to study the neurobiology of the brain. These advances in technology has correlated with great strives made in mental health care, from more sophisticated diagnoses to more specific treatment regimens. What was before understood as melancholia now yields a diagnosis of depression, an ailment with an arsenal of modern medications awaiting use. Yet such advances have not arisen without issues, for despite the cleverness of the scientist, or perhaps as a result of their eagerness, currently 20% of the adult population qualifies for a mental disorder (Frances *Letters*). With all the progress being had in neuroscience research and mental health treatments, why is 1/5$^{th}$ of the population still diagnosable? As the chairman of the DSM-IV

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taskforce recently said, "The boundary of psychiatry keeps expanding; the realm of normal is shrinking" (Frances *Letters*). How is it that the increase in scientific knowledge likewise spawned a seemingly increase in disorders? The problem here falls into the category of quality, rather than quantity (and quantifiable results).

The purpose of this thesis is to explore the relationship between philosophy, science, and medicine. In essence, I am interested in how these seemingly separate disciplines unify through the conversation on mental health. Specifically, I wish to elucidate how a 400-year old philosophical tradition has impacted the language used in modern neuroscientific research, and further the impact that this language has on mental health treatment. The philosophic tradition I scrutinize throughout the work is the typified (Cartesian) Dualism, placing its nexus with Rene Descartes for simplicity, understanding that his thoughts were influenced by a much deeper tradition reaching back, at least, to Plato. I will trace how two central aspects of this tradition, dualism and reductionism, translate into modern neuroscientific research, particularly in the language used to design, interpret, and relay scientific findings. This language of neuroreductionism, and its inability to adequately describe the human condition for lack of complex appreciation, forms a central problem while discussing mental health paradigms. When using a neuroreductionist language, sensible conversations concerning humanistic attributes (i.e. emotions and reason) are impossible, for the language fails to encapsulate words speaking to these concepts. This failing, denoted as the mereological fallacy, is best defined as the ascribing attributes to parts of the creature that logically only make sense when applied to the creature as a whole. This fallacy forms the basis for my critique of

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the accepted conceptualization of research and treatment that fall under the neuroscientific classification, where nonsensical neuroreductionism has become the norm of scienfitic and medical writing. This nonsensical language further underlies stark commodification seen in the mental health industry, for the patients cease to exist linguistically as humans, becoming rather biological mechanisms, an abuse resulting in millions of victims. Thus, I will argue that the inherited language used in modern neuroscience research and mental health treatment lacks a critical appreciation for the human condition, causing fundamentally flawed theories that lead to commodification of treatment and patient abuses. I will make this argument in three parts, the first dealing with the history of Cartesian-Dualism and its establishment in modern practice. Starting with the writings central to Descartes philosophy, I will trace how the language he used, his very sentence structure, has directly impacted the current manner through which modern scientific findings are thought about and relayed. The second chapter will outline the theory behind the mereological fallacy, and why the understanding begotten is crucial for a successful mental health conception. Throughout this second chapter I will make extensive use of Ludwig Wittgenstein's philosophy to better understand what is necessary for language to be sensible, and how modern neuroscience fails to achieve it., seen through primary research articles and popular explanation just the same. And finally, in my third chapter I will examine the practical consequences that the mereological fallacy has upon the field of mental health diagnostics and treatment. I will elucidate these consequences by examining the current state of mood disorders research and treatment, starting with how the mereological fallacy has directly impacted the

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conceptualization of these disorders, and finally how this linguistic misuse has infected the field to it's center, seen predominately through the Diagnostic Statistic Manual and personal depression narratives of the patients. Ultimately, with this thesis I hope to demonstrate the necessity of linguistic precision in scientific, medical, and philosophical writings, arguing against the crutch of reductionism currently supporting theories that deal with undue complexity, positing rather a language that is sensitive to being and environment as a whole, as existent. Ultimately, the purpose is to answer the question: What is quality of mental health?

Who is *"I"*?

A Short History on Cartesian Dualism and its Monstrous Effects

"All *explanation* must disappear, and description alone must take its place."
– Ludwig Wittgenstein *Philosophical Investigations* §109

Upon finishing his eight years of Jesuit education, Rene Descartes reflected, "I found myself embarrassed with so many doubts and errors that it seemed to me that the effort to instruct myself had no effect other than the increasing discovery of my own ignorance" (Baird and Kaufmann 395). This remarkable display of sincere humility, accomplished through the very Jesuit practice of reflection, birthed a doubt in Descartes' life that eventually entrenched nearly all subsequent western thought in a destructive dichotomy, reaching from academic philosophy to cognitive neuroscience. While exploring the depths of his doubt, Descartes realized that uncertainty was paramount through any perceived understanding, stating, "I was struck by the large number of falsehoods that I had accepted as true in my childhood, and by the highly doubtful nature of the whole edifice that I had subsequently based on them" (Baird and Kaufmann 393). And rather then shying away from such thoughts, having admitted that all he knows is naught, Descartes, perhaps uniquely, confronted these doubts through an attempt to "demolish everything completely and start again right from the foundations…" so as "to

establish anything at all in the sciences that was stable and likely to last" (Baird and Kaufmann 393).

His thorough demolition started with doubt cast on "all things, especially material things," citing how the senses are prone to deception, such as perceiving distant objects as smaller, along with other manifestations of perceptual distortions and illusions (Bennet et al. 9). But even Descartes admits it is "insane" to deny the reality of all sensual experiences, despite their obvious limitations, an argument he neatly sidesteps with two thought experiments: the perpetual dream, and the evil genius (Bennet et al. 13). In both circumstances, Descartes enables the perceiving agent to maintain conscious sanity, where the deception arises not through sensual malfunction but rather in the underlying fabric of a construed reality, that being either a continuous dream state or artificial edifice designed by an omnipotent deranged genius. To illustrate the encompassing nature of each conception, Descartes said, "I shall think that the sky, the air, the earth, colors, shapes, sounds and *all external things* are merely the delusions of dreams which [some malicious demon] has devised to ensnare my judgment" (Bennet et al. 15, my emphasis).

With this assertion, Descartes established the foundation for his now famous argument, one that rest solely on the distinction of "all external things." This argument, usually recalled as "I think, therefore I am," but stated first in his *Meditations on the First Philosophy* as "I am, I exist…every time that I pronounce it or conceive it in my mind," placed the sole semblance of certainty upon the internal conception of the human soul, and therefore drew a sharp distinction with the proposed external world (Baird and Kaufmann 409). For it was the external world that dissolved with his acidic doubt, where

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as the capacity to principally doubt whether one could or could not doubt meant

something internal "had to exist in order to be deceived" (Baird and Kaufmann 396). And

it was this internal realm, the thinking "I," that Descartes seized as his starting foundation

upon which to build the rest of reality, drawing a sharp distinction between the materially

perceived world and the mental, or mystical realm, that imbued the material sense with

consciousness and movement, a conception now understood as Cartesian Dualism.

Paramount to the understanding of this distinction is the nature of identity that

Descartes places upon this "I," as it abolishes the typified sense of embodied personhood,

found for example when identifying oneself in a mirror or photograph, and replaces it

with the abstracted idea of a "mind" or "soul" (Baird and Kaufmann 398). Descartes

states "the idea I have of the human mind, in so far as it is a thinking thing, which is not

extended in length, breadth or height and has no other bodily characteristics, is much

more distinct than the idea of any corporeal thing," further concretizing the division

between material body and mind and increasing the emphasis on the later by placing the

familiarity that one holds with self-identity onto the mind (Bennet et al. 37). The mind-

body distinction, forming the essence of Cartesian Dualism, while providing Descartes a

foundational platform through which to construct scientific and philosophical analysis

including the contemplation of the souls immortality, was likewise fraught with logistical

issues.

The principle issue, how an immaterial soul interacts with the material body, was

brought to Descartes attention through a thorough discussion with Princess Elizabeth of

Bohemia. Elizabeth's concerns, which Descartes grappled with up to his death, still form

the basis for the primary problem of the mind-body argument nearly 400-years after its

first phrasing (Baird and Kaufmann 398). Elizabeth asked "I beg of you to tell me how

the human soul can determine the movement of the animal spirits in the body so as to

perform voluntary acts – being as it is merely a conscious (pensante) substance. For the

determination of movement seems always to come about from the moving body's being

propelled…" a poignant question because it not only draws attention to the mechanistic

gap in Descartes reasoning, but also because it uses similar physical logic (i.e. that body

in motion remains in motion…) that Descartes himself posited, only later to be used by

Newton while conceiving of his three laws (Baird and Kaufmann 443). To this line of

questioning, Descartes first attempted to make allusions to gravity, being an immaterial

force acting on material objects, an argument which Elizabeth further rejected due to

Descartes lack of evidence for any sort of interaction. Descartes, when pushed further,

finally conceded that "the human mind is incapable of distinctly conceiving both the

distinction between body and soul and their union, at one and the same time; for that

requires our conceiving them as a single thing and simultaneously conceiving them as

two things, which is self-contradictory" (Baird and Kaufmann 446). Instead of rejecting

the argument because it is inconceivable, Descartes rather rejects human reason's ability

to grapple with it, a similar line of reasoning he uses to justify the existence of God,

being that an imperfect being cannot conceive of a perfect one, and as such the idea of

God must be rooted in a perfect being (Baird and Kaufmann 415).

Additionally, in this conversation with Elizabeth, Descartes posits on the nature of

those who can fathom the mind-body distinction, further illuminating the deep trend that

this problem has posed for western thought. Descartes states, "those who never do philosophise (*sic*) and make use only of their senses have no doubt that the soul moves the body and the body acts on the soul; indeed, they consider the two as a single thing, i.e. they conceive of their union; for to conceive of the union between two things is to conceive of them as a single thing" (Baird and Kaufmann 445). A generalization perhaps not meant for dissemination and thorough analysis, Descartes letter to Elizabeth still neglects a major influence both directly on his work as a scientist and philosopher, and also more generally of all western civilization, an influence found precisely in Aristotle. For it was Aristotle who first argued against the dualistic conception found throughout Plato's dialogues, where the human being was "not a unified substance but a combination of two distinct substances, a mortal body and an immortal soul," a Platonic-Christian tradition espoused by Augustine, and solidified through the philosophical-scientific-religious texts of Descartes (Bennet et al. 130). Aristotle however argued, "a human being is a unified substance, the soul (*psuche*) being the form of the body," a slight, but pivotal, distinction (Bennet et al. 130). Slight, because his argument retains the conceptions of both body and soul, and pivotal because at least linguistically, "they" function as one entity, compared to the hierarchical-Platonic fashion where the soul acts through the body.

The credence for Aristotle's distinction, and subsequent two-millennia of argumentation upon it, lies in the conception of identity that the human being at the center of the discussion associates with, answering the question, 'Who am I?'. In the Platonic tradition, reaffirmed by Descartes, 'I' most assuredly represents an "immaterial

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mind, a 'spiritual' thing" not subject to physical laws, where as the body functions as an "extended, non-thinking thing," fully governed by the same physical laws that all matter, animate and inanimate, are subject too (Baird and Kaufmann 398). In this division, the human being remains a divided *I*, where any accomplishment, effort, suffering, elation, and meaning-making are artifacts of an unperceived soul or immaterial mind, representing ones interaction with an abstracted power rather than products of individual labor. In such instances, when a human speaks that "I graduated from college," it is not in relation to the physical being that walks the stage and receives the diploma, but rather the mind, such that "I, my mind, graduated from college," has equivalent meaning. This phrasing becomes particularly pernicious when one switches from action to emotional reflection, and further to relation of injury, for treatments of an ethereal mind by beings that function within the physical realty certainly begets operational difficulties. Phrases ranging from "I [my mind] is happy" to "I [my mind] is depressed," perhaps at first seem less foreign than the attribution of "mind" to action, but beneath the innocuously disguised vernacular lies a theoretical failing undermining sensible comprehension and relation of our explicitly human reality. To statements such as these, Aristotle remarked that "to say that the soul is angry is as if one were to say that the soul weaves or builds. For it is surely better not to say that the soul pities, learns or thinks, but that a man does these with his soul," where "doing something with one's soul being like doing something with one's talents" (Bennet et al. 132). Through his unification of soul and body, Aristotle contrast decisively with the dualistic tradition by ascribing human qualities to the human being as a whole, not compartmentalized or reduce to abstract concepts.

This fundamental move exposes the principle problem of Cartesian dualism, categorized as the mereological fallacy, and likewise posits an alternative perspective that enables sensible thought on humanities relationship to the perceivable world. As mereology is "the logic of part/ whole relations," P.M.S. Hacker and Maxwell Bennett use the term "mereological fallacy" to describe a situation where a part of an entity is ascribed attributes that only make sense when speaking of the whole (Bennet et al. 22). Particularly, Hacker and Bennett describe "the principle that psychological predicates which apply only to human beings (or other animals) as wholes cannot intelligibly be applied to their parts, such as the brain," a fallacy which they use to critique Cartesian Dualism (Bennet et al. 21). Because inherent to the tradition of Platonic or Cartesian dualism is a reduction of or ascription to the soul or mind qualities that only make sense when applied to the whole, such as the previously mentioned happiness, depression, anger, or college graduate, these traditions inherently commit the mereological fallacy. The foundation for this mereological argument stems from Wittgenstein's thought on the use and construction of language, particularly seen in the passage, "Only of a human being and what resembles (behaves like) a living human being can one say: it has sensations; it sees, is blind; hears, is deaf; is conscious or unconscious" and further through the understanding that for language to have meaning, it must contain the possibility for sensible use (Bennet et al. 19). Taking this Wittgensteinian approach, Cartesian Dualism fails because the arguments "lack sense…" in that "no sense has been assigned to such forms of words, and that accordingly they say nothing at all, even though it looks as if they do" (Bennet et al. 31). For example, it might appear that "my

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mind believes…" but in order for this to make sense, your "mind" would have to exhibit some behavior of "belief," a situation that cannot be imagined (what would it look like for the mind to exhibit belief?).

The failing division found in Cartesian Dualism is not limited to the language of mind, souls, and beliefs, but transitions seamlessly into modern neuroscience, both through the research experiments and paradigms which instruct them. The mereological fallacy surfaces clearly when one replaces mind or soul with brain, as seen in, "my brain believes…" where again this phrase fails to make sense because the brain is unable to exhibit belief behavior, as only a human being can. The ascription of psychological attributes to the brain is easily found throughout neuroscience literature, such as Francis Crick, a Noble Prize winning scientist, statement: "When the callosum is cut, the left hemisphere sees only the right half of the visual field…both hemispheres can hear what is being said…one half of the brain appears to be almost totally ignorant of what the other half saw" (Bennet et al. 154). What would it mean for the brain to see? To be ignorant? These questions do not have answers, because the language used expresses no clear idea – only the human with the severed callosum sees, only the human is ignorant. Hacker and Bennett argue that the continuation of the mereological fallacy into the discipline of cognitive neuroscience results from a misapprehension of the fields goal: "to investigate the neural conditions and concomitants of the acquisition, possession and exercise of sentient powers by animals," not to "explain how an animal perceives or thinks by reference to the brain's, or some part of the brain's, perceiving or thinking" (Bennet et al. 7). In trying the elevate the neural research to the level of humanistic proportion,

scientist have stretched the language used to relay research findings past the point of comprehension, therefore negating their initial effort to elucidate the unknown.

But, one might rightly ask, "What purpose does clarifying the language used to relay neuroscientific findings really matter if the underlying mechanisms are still better understood?" This is an example of a fundamental question posed for any research project, addressing the intended purpose served, and one that certainly deserves deliberation and clarification. The end that this pursuit, this thesis project, serves is ultimately to redefine the language used throughout the discipline of neuroscience, so as to relate findings in a more coherent and logical fashion. The purpose for this clarification is twofold: the first being that the work itself evinces worth, in that an expression that fails to express anything ultimately marks a failure, and thus the work directed at clarifying the language used to express the essence of the research instills meaning into that research. The second, and perhaps more consequential purpose of removing the mereological fallacy from neuroscience conception, is to thwart the desire of a strict reductionist approach. As seen in Descartes reasoning, when he reduced the essence of humanity to the idea of a soul, the very identity that the soul was supposed to represent seemed to miss a fundamental attribute. Likewise, in neuroscientific research, when human beings are reduced simply to their neurologic mechanisms, greater clarity might be gained about their biology, but at the cost of realizing their full humanity. This tendency towards strict reductionism, fueled by nonsensical language, I will argue has drastic effect on mental health treatments, where the ailments that patients exhibit are simply distilled to improper neuronal functioning, ignorant of other systemic and social

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causes and possibilities for intervention. To illustrate this point, I will critically focus on the literature and treatment regiments surrounding mood disorders, particularly depression, in an effort to establish the human being again as the focal point of emotional cognition. Ultimately, this pursuit will serve to better inform patients, as well as practitioners, on the importance of linguistic conceptions when identifying proposed neurologic disorder, for both the success of treatment and the identification of new areas of cognitive research.

— II —

Exposition on The Mereological Fallacy:

Sense and Nonsense in Neuro-reductive Language

"What we are destroying are only houses of cards, and we are clearing up the ground of language on which they stood." – Ludwig Wittgenstein PI §118

The human brain, with an estimated 1.1 trillion cells (each of which can connect with 6-thousand other cells), is certainly a complex organ. In an effort to understand subtle mechanisms within this complexity, scientists have long tried to reduce, or focus, their domains to certain systems that correspond to particular behaviors and senses. For example, the processing pathways behind olfactory perception, traveling serially from the nasal cavities, to the olfactory bulbs, to the lateral hypothalamus, and then finally to the orbitofrontal cortex, are well studied. This pathway for the sensory system begets the understanding that olfaction is the only sense to bypass the thalamus, a subsection of cells that processes all other sensory inputs, and therefore encourages researchers to support the empirical finding that sense of smell has a stronger association with memory than other senses, perhaps due to this more direct pathway to cortical areas. Similarly, the visual system, often held as the most complex of the human sensations, has been stringently studied, with mappings of all processing locations and connective tissue. Descartes, without the benefit of modern technologies, hypothesized that an image

projected onto the retina was eventually reproduced on the pineal glad, through

transmission by the optic nerves (Hacker *Meaning and Mind* 158). This early conception

of visual processing, precocious for its time and reflective of Descartes intellect (being

that it hypothesized projections over strict localization for functions), nonetheless was

plagued with logical inconsistencies. Firstly, not as a knock against Descartes given the

time of his experiments, it is still important to note that the pineal gland is not involved

with visual processing, but rather is a small endocrine gland that mainly functions to

produce the neurotransmitter serotonin. This physical misapprehension, incorrect as it

was, proved less harmful to subsequent generations of neuroscientist than was the

linguistic framework through which he made his claim. As the understanding of the

visual system, and almost all other sensory systems, were slowly elucidated correlating

with the progression of medical technology, the means through which to describe these

systems stayed, surprisingly, consistent. The foundation for the consistency lies in the

habitual ascription of psychological processes to specific brain locations, with the only

transgression across generations of researchers being the metaphorical inhabitant of these

processes, be it the soul, mind, or simply, the selected brain processes. Where Descartes

ascribed visual function to the pineal gland through interaction with the soul, Hermann

von Helmholtz, a pioneering scientist and philosopher, described visually system

functioning similarly, stating, "we can thus regard all seeing as a continual search for the

answers to questions posed by the brain. The signals from the retina constitute 'messages'

conveying these answers. The brain then uses this information to construct a suitable

hypothesis about what there is…" (Hacker *Meaning and Mind* 159). By substituting the

soul for brain, and pineal glad for more physiologic accurate locations, Helmholtz has simply continued in the Cartesian fashion by reducing a psychological behavior, that of seeing, to a specific location, that of brain. The problem with this reductionism come clearly through the question, what does it mean to say 'the brain sees'? for no sensible answer can be posited. In reaction to this continually incoherent expression, modern Wittgensteinian philosopher PMS Hacker responded, "If it is nonsense to say that a person's mind has toothache, smells the scent of roses, or intends to go to London, it is 'nonsense on stilts' to suppose that a brain classifies and compares, ask questions and answers them, constructs hypotheses and makes decisions" (Hacker *Meaning and Mind* 159). Hacker's reasoning is that the predicates in question – to compare, classify, etc. - only make sense if relating to a human being, not just one part such as the brain or theorized soul, for the brain alone can exhibit none of the behaviors necessary to constitute questioning or comparing, and thus such phrasing is meaningless (Hacker *Meaning and Mind* 159).

Hacker's critique of the language used in modern neuroscientific research is characterized as the mereological fallacy, and stands as a formidable critique to the seemingly limitless potential of the rapidly expanding field of neuroscience, where advances in neuroimagining techniques and other technologies have given rise to *in vivo* analysis of neurologic processes as never before seen (Burgos 72). The mereological fallacy, rooted the field of mereology, is defined as "ascribing to a part of a creature attributes which logically can be ascribed only to the creature as a whole," (Burgos 73). Hacker pays specific attention towards psychological attributes, which "apply only to

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human beings (or other animals) as wholes" and "cannot intelligibly be applied to their parts, such as the brain" (Burgos 73). The inspiration for this assertion comes from an excerpt from Ludwig Wittgenstein's *Philosophical Investigation,* "Only of a human being and what resembles (behaves like) a living human being can one say: it has sensations; it sees, is blind; hears, is deaf; is conscious or unconscious" (Wittgenstein 103$^e$). Central to this fallacy is the notion of sense, of meaningful linguistic expressions, showing that the critique argues not empirically or theoretically with neuroscience, but rather logically, examining what the scientist are or are not allowed to sensibly say (Burgos 72). Because the language used by the researchers to examine and subsequently generalize their findings to the population of interest is ultimately what imbues the research with meaning, careful examination of the implications and consequences is necessary so as not to the contort the clarity of results so strived after.

To fully grasp the implications of Hacker's declaration of the mereological fallacy, one first must grasp a complete understanding of what is meant by sense and non-sense within the argument (for if one is to critique a whole field of blossoming research, the argument against nonsense certainly must be lucidly expressed). Hacker and Bennett, critiquing the presumed relationship between psychological attributes and the brain, said, "Our point, then, is a conceptual one. It makes no sense to ascribe psychological predicates (or their negations) to the brain, save metaphorically or metonymically" (Bennett et al. 21). In this instance, by "sense" Hacker and Bennett imply "that no sense has been assigned to such forms of words, and that accordingly they say nothing at all, even though it looks as if they do" in response to a phrase such as, "the brain sees…"

(Bennett et al. 30). Recalling Wittgenstein's passage for support, "only of a human being it can be said…it sees," Hacker and Bennett assert "the resultant combination of words does not say something that is false, rather is says nothing at all, for it lacks sense," an assertion that undermines much of the presumed progress in cognitive neuroscience research – by stating that all the effort has amounted to naught because the language used throughout the experimental investigations are nonsense.

Continuing on this train of logic, Hacker and Bennett say that, since the phrases are necessarily nonsense, and "one cannot mean a nonsense, since there is nothing, as it were, to mean," such that the scientists "words must not be taken to have their ordinary meaning" (Bennett et al. 23). In this understanding, the scientists are not deviating from the vernacular sense of a word so much as creating a new meaning for that word, which is an unavoidable consequence when exploring the edge of current understanding. For example, scientists do not literally mean, "the brain sees…" but "the brain sees*…" where sees* is imbued with new meaning different than sees (Bennett et al. 24). The problem with this construction of language is that the new meaning is not explicit in the use, such that anyone outside the domain of the research, or perhaps anyone who was not an author of the paper, could not concretely grasp the intended meaning, consequently resulting in confusion of research results and a misapplication of findings. However, it is not the case that even the scientists who supposedly coin new meanings for old terms strictly adhere to their new usage, such as through the confusion resulting from homonymous terms. Hacker and Bennett point out one such case, where scientists at first, and sensibly, use the term "representations" and "mappings" as reference to correlates of

"certain neural firings with features in the visual field," where the mappings and representations are strictly organizations of empirical data gathered from the experiment (Bennett et al. 27). The meaning behind these terms however is skewed later when they are defined by the original researchers, saying, "a representation for shape would be a formal scheme for describing some aspects of shape, together with rules that specify how the scheme is applied to any particular shape," and further that "a formal scheme is a set a symbols with rules for putting them together and that a representation, therefore, is not a foreign idea at all – we all use representations all the time" (Bennett et al. 27). In this instance, the original usage of representation to describe a pattern of neural activity has become blurred into the abstracted meaning of describing symbols purportedly of what the brain perceives, such that representation and representation* are not synonyms, but homonyms (Bennett et al. 27). If the researchers confuse the meaning of a word within the same work, the readers, and general public, are liable to the same, if not more severe, confusion.

Yet, even though Hacker and Bennett provide clear descriptions and examples of sense and nonsense, their analysis failed to detail the outright criteria for sense, notably lacking any concise definition of sensible language. Such an example can be found, however, through the source of their original argument, in the writings of Ludwig Wittgenstein. Attributing their understanding of sense to Wittgenstein is appropriate, firstly, because of his foundational role in their original argument ("Only of a human being…"), and further because of the extensive background that Hacker has with Wittgensteinian philosophy, having translated or written on all of his major works.

Additionally, Hacker and Bennett's sensitivity to a words dynamic meaning transcribes directly from Wittgenstein's tradition, particularly in his language game analysis. Understanding this, Wittgenstein did not conceive of sensible language as generic classification applied broadly, but held, "There is no general account of nonsense, for what makes sense and what does not make sense varies from case to case and from one language-game to another" (Hacker *Mind and Will* 95). At first an ambiguous and seemingly subjective description, especially for a philosopher whose purpose for philosophy was "not new knowledge, but a clear understanding," this theory of sense and nonsense hinges on the concept of language-games, a distinct contribution of Wittgenstein's philosophy (Hacker *Mind and Will* 94). To further explore how sense or nonsense is determined, one first must distinctly grasp the concept of language-games, as this distinction is used to verify or nullify the correct meaning of word usage.

The clearest description of Wittgenstein's language-game concept is found in his posthumous publication, *Philosophical Investigations*, the same seminal work that Hacker and Bennett used to found their mereological fallacy argument. However, given Wittgenstein's declared purpose for the work – "I should not like my writing to spare other people the trouble of thinking. But if possible, to stimulate someone to thoughts of his own" – certain amounts of interpretation of the original text are necessary to discover the intended meaning behind the language-game concept. Wittgenstein centers the discussion of language-games around the similarity that words have with each other, and that language has with itself: "Instead of pointing out something common to all that we call language, I'm saying that these phenomena have no one thing in common in virtue of

which we use the same word for all – but there are many different kinds of affinity between them. And on account of this affinity or these affinities, we call them all 'languages'" (Wittgenstein 35ᵉ). To illustrate this point of implicit affinity, Wittgenstein uses the example of visceral games, asking the reader to describe the similarities between, for example, a game of soccer and a personal game of catch against the wall – both are classified as games, but no explicit similarity links the two separate entities to the meaning of game (Wittgenstein 36ᵉ). To the problem of describing what characterizes the denotation of game, Wittgenstein wrote, "I can think of no better expression to characterize these similarities than 'family resemblances'; for the various resemblances between members of a family – build, features, colour of eyes, gait, temperament, and so on and so forth – overlap and criss-cross in the same way. – And I shall say: 'games' form a family" (Wittgenstein 36ᵉ). This concept of game then in not defined or concretized with defined boarders, but rather "is a concept with blurred edges," where the concept game calls to mind different categories that fit that idea, where individual rules and specifications no way bear upon the other entities grouped in this category of "games" (Wittgenstein 38ᵉ).

      An underlying implication of this language game conception is that only through the social use of language are words within the language imbued with meaning – for no private language can exist outside of the expression of relatable ideas. This idea has enormous implications on our tacit understanding of language, for the precise definition or understanding cannot be taken for granted, but rather must be mined from the context through which it is used. Wittgenstein explores this consequence by saying; "We don't

notice the enormous variety of all the everyday language-games, because the clothing of our language makes them all alike. What is new (spontaneous, 'specific') is always a language-game" (Wittgenstein 236e). The "clothing of our language" here refers the multiplicity of word's meaning, dependent upon use, yet cloaked by similar expression. The similarity of "clothing" between language-games then allows for the transference of concepts between them, with the accuracy of the transference depending of course on the similarity of context within which the word is transferred.

It is on this ground, the ability to transfer between different language-games, that Hacker and Bennett have founded their mereological fallacy. Taking again the example of the use of representation to describe the physiology of brain, and representation* to describe occurrences within the brain, one can apply the language-game logic and see that representation and representation* each adhere uniquely to an individual language-game. Although the meaning conveyed in each and the manner through which to expresses them is "clothed" in similarities, the two words ultimately fail to convey the same idea, resulting in a confused intention and a muddled expression of results. Because of this confused use, the meaning behind either expression is lost – as the switched appropriation of the unintended meaning to the opposite word results in a nonsensical expression – a drastic consequence, for "to say that a combination of words is nonsense is to exclude it from language" (Hacker *Mind and Will* 97). Consequently, failing to write tightly, remaining within the specified and intended language-game, expunges whatever intended worth the piece had: "Philosophic confusion stems, above all, from crossing language-games, from employing an expression in one language-game on analogy with a

use that belongs to another but which has no place or a quite different place in this one. To say, in such cases, that an expression is nonsense is above all to say that it does not belong to the language-game to which it appears to belong" (Hacker *Mind and Will* 99).

The essential mistake then that Hacker and Bennett elucidate in cognitive neuroscience is the confusion of language-game specificity, and the negligence of the researchers to address their specific "game". As before stated, Hacker and Bennett have no qualms with "scientists introducing a new way of talking under the pressure of a new theory," for such is the consequence of experimenting unexplored territory (Burgos 74). The problems arise when the antiquated or separate language-game vernacular becomes entwined with the novel results the scientists are earnestly attempting to discuss. Hacker and Bennett suggest a conjecturally simply solution to the language-game confusion had within research, that of outwardly defining an "explicit definition" for the use of possibly confused word in the introduction, and following through with this meaning in the works entirety (Burgos 74). For example, one would say, "for the purposes of the analysis, 'sight' will be defined as a 'temporary activation of one or more neurons in striate cortex correlated with a temporary presence of an electromagnetic radiation of a certain wavelength" (Burgas 74). The issue with this solution of explicitly defining the language-game followed in the intended work is simply that "cognitive neuroscientists neither have done, nor seem to want to do, the additional work" of classifying each word used to express their paradigm (Burgos 75). An understandable complaint, given the strict length requirements already imposed in most journals, having to explain the paradigm used along with the language would considerably lengthen all articles. Additionally, the skill

required to properly analyze the correct meaning and intention of the words used is perhaps lost on cognitive neuroscientist, given that the problem arose in the first place and was yet to be addressed until a linguistic-philosopher wrote on the topic, again showing that a great deal of extra work would need to be expended in order to have lucid expression. Understanding these complaints, cognitive neuroscience is in no way excused from the role of addressing them, for as already established, to continue writing and relaying information as such would be to continue in nonsense. And since nonsense inherently is worthless, the very merit of the field of cognitive neuroscience is at stake, in addition to the millions of people whom their research impacts, a social-justice topic that will be discussed at length below. The extent of this work is so great, that Bennett, the neuroscientist of the duo, believes "that every first-rate cognitive neuroscience laboratory now needs a very good, critical, analytical philosopher" (Bennett et al. 163). This newly conceived, practical role for the philosopher would embody the definition that Wittgenstein put forth: "What is your aim in philosophy? – To show the fly the way out of the fly-bottle." (Wittgenstein 110ᵉ). What exactly the outside of the bottle has to offer that the inside did not is yet to be discovered.

Specific instances where a designated philosopher could have been of use to a cognitive laboratory abound, a few of which are specifically highlighted by Hacker and Bennett, showing resoundingly clear examples of the mereological fallacy: "psychological predicates which apply only to human beings (or other animals) as wholes cannot intelligibly be applied to their parts, such as the brain" (Burgos 73). The first example given by Hacker and Bennett continues the aforementioned discussion of the

visual system: "We can regard all seeing as a continual search for the answers to questions posed by the brain. The signals from the retina constitute 'messages' conveying these answers. The brain then uses this information to construct a suitable hypothesis of what is there" (Bennett et al. 154). This quote comes from J.Z. Young, an Oxford University educated neuroscientist whom *Nature* described as "one of the most influential biologists of the 20th century" (Messenger 1997). Clearly, the quote exhibits examples of the mereological fallacy as conceived by Hacker and Bennett, exposed through such questions as: How does the brain ask questions? What would that look like? How does the brain behaviorally show the use of information? Through the ascription of the human qualities of knowing and asking to the brain, confusion results as to what Young really intended to say – does the brain really ask questions or are there some neurophysiological underpinnings for this obtuse language? Another quote illustrating the expansive effects of the mereological fallacy comes from Colin Blackmore, a Cambridge University educated neuroscientist, who ironically is the director of *The Institute of Philosophy's Centre for the Study of the Senses at the School of Advanced Study* at the University of London, and whom *The Observer* said was "one of the most powerful scientist in the UK" (Observer 2003). Blackmore stated "the brain [has] maps, which are thought to play an essential part in the representation and interpretation of the world by the brain, just as the maps of an atlas do for the readers of them" (Bennett et al. 155). This quote perfectly illustrates the discussion from before over the confusion of maps and representations – are they physiologic maps of neuronal activity? Or, are there actual maps project in the brain, which the brain then reads? This quote illustrates nicely the

confusion had when borrowing words from other language-games, as Blackmore shows directly by stating that the brain reads "maps" just as a human reads "atlases". And to illustrate that this mereological fallacy is not restricted to scholars educated in the United Kingdom, Gerald Edelman, a native of New York and graduate of the University of Pennsylvania School of Medicine, as well as a winner of the Noble Prize in Physiology or Medicine, also furthered the fallacy. Edelman stated, "the brain 'recursively relates semantic to phonological sequences and then generates their syntactic correspondences…by treating rules developing in memory as objects for conceptual manipulation" (Bennett et al. 155). The reduction of the psychological attribute of semantic and phonological comprehension to solely the brain exhibits the mereological fallacy: what does it look like for the brain to relate semantic and phonological sequences? Through what behavior does it exhibit this skill?

The opening quote to this chapter, from Wittgenstein, says, "What we are destroying are only houses of cards, and we are clearing up the ground of language on which they stood" (Wittgenstein 118$^e$). The examples of the mereological fallacy expressed above illustrate these "houses of cards," these fallible examples of presumed understanding, expressed with confidence by the worlds leading scientist. And regardless of the strong foundation of empirical knowledge that these quotes are built upon, they nonetheless reflect a deep misunderstanding in the field of neuroscience. Hacker and Bennett describe the role of neuroscience as strictly limited to "empirical questions about the nervous system," not to explain "how an animal perceives or thinks by reference to the brain's, or some part of the brain's, perceiving or thinking" (Bennett et al. 7). The role

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of the philosopher then is to examine "conceptual questions, the description of logical relations between concepts, and the examination of the structural relationships between distinct conceptual fields," ultimately clarifying and approving the use of language found with the domain of cognitive neuroscience (Bennett et al. 4). Until these roles are realized, and acted upon, the research had in cognitive neuroscience will continue to betray scientist and lay people alike, for the misattribution of human qualities will forever be locked inside the skull, limiting the potential of human understanding. Striving towards a goal of greater clarity, the ultimate realization to be had is: "The location of a human being's thinking, recollecting, seeing, deciding, getting angry, or being astonished is *where the human being is when he thinks*, etc." (Bennett et al. 142). By eliminating these distinctly human qualities from the humans experiencing them, neuroscience has allowed a grave abuse of identity, found most clearly through the use of pharmaceutical interventions, a topic which will be discussed at length through the next chapter.

## — III —

### Social Effects of the Mereological Fallacy:

*It's What You Say, and, How You Say It*

"The confusion and barrenness of psychology is not to be explained by its being a 'young science'; its state is not comparable with that of physics, for instance in its beginnings. (Rather, with that of certain branches of mathematics. Set theory.) For in psychology, there are experimental methods *and conceptual confusion.* (As in the other case, conceptual confusion and methods of proof.)

The existence of experimental method makes us think that we have the means of getting rid of the problems which trouble us; but problem and method pass one another by." – Ludwig Wittgenstein PI §371.

*The Anxiety Disease*, a book written by Dr. David V. Sheehan M.D., purports "anxiety is <u>not</u> always psychological, but rather a disease that can now be controlled" (Sheehan *back cover*). Such a perspective is said to "offer hope to millions of men and woman across the country" through "medical science," an admirable goal supported by less-than-admirable science. Sheehan differentiates anxiety into two fundamentally different categories, as he conceives it: exogenous, or provoked anxiety, and endogenous, or anxiety produced from within (Sheehan 9). Exogenous anxiety is described as "a normal reaction to stress outside the individual," such that there always exists a "justifiable source for this type of anxiety" (Sheehan 9). When one encounters a bear while hiking, and feels the sudden physiological and emotional response, this is of the

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exogenous kind. Conversely, endogenous anxiety is characterized as a "disease, whose victims appear to be born with a genetic vulnerability" to anxiety, with symptoms that emerge suddenly without an apparent stimulus (Sheehan 9). The notion of seemingly random "panic attacks" depicts the nature of endogenous anxiety, such that the physiological and emotional response of the bear seen while hiking exist, sans the bear. Sheehan describes these panic attacks as "coming from within [the] body," not as a response to external events, and thus the endogenous, or "born within" nature of the classification (9). As an enticement to read the book, Sheehan lists nine criteria that readers should consider, noting "if you have answered 'yes' to one or more of the preceding questions [in the past six months], it is possible that you have a biologically based anxiety disorder," certainly then a condition worth reading more about. These questions include: Difficulty in falling asleep? Bouts of excessive Sweating? Tingling or numbness in parts of the body? And, avoiding situations because they frighten you?

It is hard to imagine a person who would not answer yes to one, if not all of the above questions as happening in the past six months. Difficulty sleeping could be an indicator of any number of underlying problems, from brain tumors to depression to undue caffeine consumption. Likewise excessive sweating could represent an underlying physiologic malfunction, or just a lack of proper physical fitness. Tingling or numbness can be precursor symptoms to the neurologic disease Multiple Sclerosis, or more simply just improper posture while sitting for an extended period of time. And we need not even consider the example of avoiding frightful situations, because to do otherwise is inherently illogical (perhaps what Sheehan meant to examine with the last question was

the source of fear for avoidance, which is regardless a detraction from his examination of an endogenous anxiety disorder). What these examples elucidate, using the very questions provided for screening, is that the experience of anxiety, and the presumed symptoms of it, are much more complex than the simple reduction proposed by Sheehan, for any of the symptoms could likewise be precursors for anxiety (is it that I can't sleep because I am anxious, or am I anxious because I can't sleep?).

The reductionist language used by Sheehan is characteristic of another reductionist thinker previously examined, that of Rene Descartes. To say that anxiety is a disease, the spoken of endogenous anxiety, that comes "from within" the body and seemingly bewitches person is reminiscent of the dualism proposed by Descartes, where the identified self (or soul) is metaphorically above, or existing in a higher state, than the physical body. The interaction between these two separate entities (body and soul, or, body and mind) is an essential nuisance, resulting from the prevalent distortion of perceived sensations relayed to the idealized objective mind (or soul). Just as Descartes discarded his physical experience of a human being because the liability to perceptual trickery, Sheehan describes a similar situation where the body (having a presumed genetic abnormality that causes anxiety) overtakes the present conscious experience causing the individual to experience, or believe that they are experiencing, an anxiety attack. Descartes' and Sheehan's similar reaction to the distressing situation of anxiety is no coincidence, but rather an artifact of their shared modus operandi of thinking, existing in western tradition of thought dominated by the scientific method. Such a method, operating under the assumption that if one is able to compartmentalize, or reduce,

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complex experiences to more simple and controlled entities, one will likewise be able to manipulate and control those experiences, such that the desire to understand the unknown is accomplished through the dissection of it.

In this sense, Descartes and Sheehan have used the tool of scientific reductionism in an attempt to better explain an overly complex phenomena, that of human consciousness. But just as the humanity is defined by the prevalent tools used (the Iron Age), the effort to reduce reality likewise depicts the compartmentalization of the individuals positing the theory. The transference from reductionist research theory to a reductionist individual perspective is easily found in Sheehan's depiction of anxiety, where if one allows for the reduction of anxiety to biological components, then pharmaceutical intervention to disrupt the seemingly array mechanisms is not only an allowable option, but a necessary one, in order to achieve the idealized individual (or the more perfect soul, in Descartes conception).

The consequences of transferring reductionist scientific theories to therapeutic treatments is catastrophic, with impacts reaching far beyond Sheehan's book, enveloping nearly the entire field of mental health. At the root of the problem of transference is a poisoning of the research vernacular with therapeutic language, and a similar recontamination of the therapeutic language with the reductionist emphasis, an essential blending of multiple different Wittgensteinian language games resulting in nonsensical use, and ultimately, nonsensical treatment. To illustrate this blending, I will primarily examine so-called mood disorders, including anxiety and depressive disorders, through an examination language used in research, diagnosis, and treatment, in order to elucidate

mental health as is, separating it from the system as conceived. I will first examine the perspective that the scientific method, and scientific language in general, imbues into mental health theories, then moving more specifically into how depression is diagnosed, and finally the ultimate medical and social consequences of this misuse of language.

Thomas Kuhn, in his monumental work *The Structure of Scientific Revolutions,* described the role of the scientist, practicing in the normal science realm, as one who "must be concerned to understand the world and to extend the precision and scope with which it has been ordered," a commitment that then must "lead him to scrutinize, either for himself or through colleagues, some aspect of nature in great empirical detail" (Kuhn 42). Operating through "normal or paradigm-based research," these scientist essentially act as fact gathers, with research "directed to the articulation of…phenomena and theories that the paradigm already supplies" and not aiming to "invent new theories," but rather cleaning up with facts the theories already in place (Kuhn 24). Defining paradigm as "an accepted model or pattern" that "is an object for further articulation and specification under new or more stringent conditions," Kuhn's paradigms dictate the manner of experimentation and means of expression in a specific field of scientific research, and thus for a scientist to operate within a paradigm is for the scientist to better explain how that paradigm describes the situation at hand, usually through the refinement of results and methods (Kuhn 23). By necessity then, "the areas investigated by normal science are, of course, minuscule; the enterprise now under discussion has drastically restricted vision. But those restrictions, born from confidence in a paradigm, turn out be essential to the development of science" (Kuhn 24). Because the experiments aim at a

fuller scope of knowledge through microscopic means, the "paradigm forces scientists to investigate some part of nature in a detail and depth that would otherwise be unimaginable," thus producing the reductionist experiments, and the language to describe them, seen in scientist from Descartes to Sheehan, and continuing seamlessly into the present.

One major consequence of this reductionist manner, aside from the efficiency gained in fact-gathering experiments, is a loss of appreciation for the complexity of the reality examined. This loss of appreciation results naturally from the limited attention capabilities of human beings, "for when we attend to something we ignore everything else" (Watts 31). This narrowed focus "is a way of looking at life bit by bit, using memory to string the bits together – as when examining a dark room with a flashlight having a very narrow beam" (Watts 31). The result of this restricted attention, of this narrow beam, is that perception is "sharp and bright," but limited to only one facet at a time, transitioning from "one area of the world after another," creating the compartmentalization that plagues scientific thinking (Watts 31). It is this ability to think mechanistically that some scholars attribute the success of Western scientist too, as compared with those practicing in an Eastern tradition, for "the Chinese – despite all their sophistication – made little progress in science because it never occurred to them to think of nature as mechanism, as 'composed' of separable parts and 'obeying' logical laws" (Watts 65). The sacrifice for this progress had in normal science was the loss of language, or cultural appreciation, used to understand the totality that the larger compartmentalized system comprised. Evidence for this sacrifice is had through the examination of any

number of objects, one being blood, for "blood in a test-tube is not the same thing as blood in the veins because it is not behaving in the same way," showing the absolute necessity of examining not just the isolated object, but also how it exists within a given context (Watts 68). The context dependent nature of mined facts in normal science is similar in effect to the family relationships of Wittgenstein's Language Games, in that a single word can be applied in many different contexts producing wildly different meanings: "Its behavior has changed because its environment or context has changed, just as the meaning of one and the same word may change according to the kind of sentence in which it is used. There is a vast difference between the bark of a tree and the bark of a dog" (Watts 68). What this ultimately amounts to in the discussion of mental health is that the "head, neck, heart, lungs, brain, veins, muscles, and glands are separate names but no separate events," and further that "in precisely the same way, the individual is separate from his universal environment only in name" (Watts 69).

Just as in the conversation of the mereological fallacy, parts examined in an experiment cannot be posited as the absolute representation of that entity – one cannot ascribe attributes of the whole to reduced parts. Thus to conceive of a complex affect such as anxiety or depression strictly as a biological disorder falls victim to the transference of reduced scientific language into therapeutic discussions, committing a mereological fallacy producing nonsensical expression both on the level of ailment and at the level of the whole individual. To speak sensibly about the mental health of an individual, one must not limit the conversation strictly to reduced biological components,

but rather must take into account how the dynamic relationship of every foreseen component of the larger environment the individual inhabits.

Wittgenstein spoke on the virility of scientific thinking as one the major sources of error and nonsense in the Western philosophic tradition, with the desire to compartmentalize complex phenomena to seemingly reducible factions. In Wittgenstein's *Blue Book*, a precursor to his landmark work *Philosophical Investigations*, he said,

> "'Our craving for generality has [as one] source … our preoccupation with the method of science. I mean the method of reducing the explanation of natural phenomena to the smallest possible number of primitive natural laws; and, in mathematics, of unifying the treatment of different topics by using a generalization. Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything. Philosophy really is "purely descriptive."' (Horwich *Was Wittgenstein Right?*)

Just as Descartes, in his night of angst, tried to reduce reality to a fact of truth objectively known, mental health practitioners try to distill the complexity of presumed mental disorders into simplified measurable constructs. In doing so however, as Wittgenstein warns, the field is lead only into "darkness," or an illusion of understanding, where the reduced forms first appear to make sense, but upon closer examination fail to elicit sensible solutions.

The ubiquitous presence of reductionist practice in the field of mental health is found at the heart of the field's concretized thought as the defining feature of the Diagnostic Statistic Manual, or DSM. Currently in the fourth edition, the DSM functions as a guidebook for physicians to follow when diagnosing patients, a means through which the process of diagnosing has become standardized (DSM IV). The reason for this standardization comes from cross-industrial use of diagnosis, from health care to legal practices to insurance coverage, necessitating a norm through which to measure patient's level of deficits (Span *Grief*). And while a standardized means of diagnosing patients ensures reliability and validity throughout the process, it also sacrifices an appreciation for the uniqueness of each patients' situation. The DSM accomplishes this standardization by providing a checklist of symptoms that guides the physicians through the diagnosis, where if a certain number of symptoms are present over a predetermined time frame, the patient is likely to be diagnosed with that disorder. In the DSM IV, under the category mood-disorders and subcategory major depression, the criteria for diagnosis are having "five (or more) of the following symptoms…present during the same two week period," and necessarily including the first two: (1) depressed mood most of the day, nearly every day, (2) markedly diminished interest or pleasure in all, or almost all, activities, (3) a significant and unintended change [5%] in body weight, (4) insomnia or hypersomnia nearly every day, (5) psychomotor agitation or retardation nearly everyday, (6) fatigue or loss of energy nearly every day, (7) feelings of worthlessness or excessive or inappropriate guilt nearly every day, (8) diminished ability to think or concentrate, or

indecisiveness, nearly every day, and finally (9) recurrent thoughts of death, recurrent

suicide ideation, or suicide attempt (DSM IV).

Given this long list of possible symptoms, over 250 different combinations could

exist within any given patient, all of which would result in the same diagnosis of major

depression. Additionally, this method of diagnosis simply reduces the patient's affect to a

possible list of symptoms, not taking into account the myriad of possible experiences that

could generate the final result of major depression. For example lack of electricity, a

burnt-out light bulb, or a broken switch all could produce the end perceived as darkness,

and as such to describe the problem as darkness alone does no illustrative justice to the

larger issues.

Further lowering the quality of assessment through an increased reductionist

approach, in the upcoming fifth edition of the DSM in the depressive disorders category,

the clause known as the "bereavement exclusion" will be removed, additionally reducing

the ailments to symptoms and attempting to isolate the condition from its known causes

(Span *Grief*). The "bereavement exclusion" was designed to limit the diagnosis of people

who have just experienced a major traumatic loss, such as the death of a close family

member, because it was understood "most people get better with natural healing and

resilience," says Allen Francis, professor emeritus at Duke University and chair of the

DSM IV task force (Span *Grief*). This elimination emblemizes the narrow focus on

symptoms rather than causes, and further exemplifies the desire to reduce complex

phenomena to compartmentalized items more easily analyzed (i.e. the complex

experience of mourning the loss of a loved one is reduced to the diagnosis of depression,

which then is combated with another set of standardized battery of approaches).

Essentially, this exclusion "is medicalizing the expected and probably necessary process

of mourning that people go through," which will result in "bereaved people [receiving]…

antidepressant medication because it is cheaper and 'easier' to medicate than to be

involved therapeutically," a drastic reduction in the understanding of mourning from an

expected social behavior to aberrant biological functioning (Span *Grief*).

This reductionist language used to solely concentrate on symptoms results in

confusion about the essence of the disorder, leading to nonsensical diagnosis and

treatment paradigms. As seen through the DSM-IV criteria for major-depressive

syndrome, nine primary symptoms presenting in hundreds of different combinations can

produce what is now clinically labeled as major-depression, a catch-all term for a

complex grouping of patients. This simplification of many presenting symptoms from

different causes into one concretized diagnosis produces the illusion that major-

depression disorder is a "homogenous condition," that is "commonly viewed as an entity"

(Parker 178). Viewing major depressive disorder as a single entity enables "researchers to

seek the cause and peruse treatments" as if all patients experience the same qualia of

discomfort, apparently disregarding the initial diverse set of symptoms that a patient can

present with, and still maintaining an absolute divide between cause and effect (Parker

178). Additionally, the bracketing of depressive symptoms into the one category is a

recent implementation in the field of mental health, a move that has greatly increased the

prevalence of the presumed disorder major-depressive. In the 1980's, the DSM-III was

released with the new category of "major-depression," essentially linking the then

thought of categories of melancholic depression and non-melancholic depression, each of which was further subdivided into distinct categories necessitating different diagnoses and treatments (Parker 179). Before this category of "major depression" was included, the prevalence of "clinical depression" was thought to be around 5% in the general population, where as after the DSM-III was published, the rates of "major depression" diagnosis increased dramatically, to 1 in 4 for woman and 1 in 6 for men, indicating that general diagnosis encompassing many presenting symptoms lacks the sensitivity previously had with the more specific domains, as well as indicating a new appreciation for depressive disorders (Parker 178). By conceptualizing depression as an entity objectively studied rather than a collection of symptoms representative of unique experiences, the focus on research becomes increasingly separated from the original patient seeking help, skewed instead towards a perspective akin to the eradication of biological, or cancerous, disease.

This distorted perception enabled by reductionist language ultimately leads to a commodification of the perceived disease, seen predominately in how patients are diagnosed and treated. Commodification here refers to the "blurring of boundaries between discomforts of daily living and psychiatric symptomatology to the point that both can be equally and efficiently remedied through mass-marketed products (i.e., psychotropic medication)" (Rubin 369). Key to this definition of commodification is the nuanced understanding of the "blurred boundaries" of once normally perceived psychological states, such as mourning, and now overly medicalized terms, such as major-depression. This blurring arises from a combination of the different language

games used by the patient and doctor alike, as in the above example of bereavement and major-depression, where each term still exists in its original domain except that the implicit meaning behind them are perverted into the disease framework.

The principle cause of this commoditized linguistic abuse, whose efficacy increases in a snowball fashion, results from the combined effect of "marginalization and decontextualization," themselves products of aggressive pharmaceutical advertising. Marginalization is the simplification of the physician's role in emotionally treating patients, relinquishing their responsibilities as healers instead to the powers of pharmaceutical agents (Rubin 373). Marginalization was enabled because of the disease as separate entity concept, where depression is conceptualized as a foreign, and unwelcome, feature in an individual's life resulting from reductionist biological language, and therefore necessitating the use of biologically active agents to ameliorate it. Because of the language used to describe depression, as a collection of symptoms apparently void of any causal connection to the patients lives, the diagnosis becomes an abstracted nuisance that likewise must be combated through the use of another foreign tool (following the logic -- since depression does not result from behavioral malfunction, why would behavioral intervention be of any use? I therefore need pharmaceutical intervention to go to the source of the problem, my brain). Commodification's potency further increases with the coupling of marginalization with decontextualization, or the simplification of the disease to strictly medical symptoms (Rubin 373).

Formally, decontextualization refers to the "elimination of the personal, social, and cultural contexts of peoples' lives from the explanatory equation, and by doing so,

reducing the complexities of living to predictable, manageable, and ultimately medically treatable symptoms" (Rubin 373). This is the very process through which the DSM operates, as described above, where externalities of the ailments are continually reduced until only a vague resemblance of the original presenting case can be located in a large generalized population, and therefore by making the condition applicable to nearly everyone, almost no one embodies the full conception. The perversion that enables decontextualization is the linguistic blurring that passes the cause of an illness to a patient's inherent deficit, rather than from external cues:

> "The central premise behind decontextualization is as follows: It isn't
> overcrowding, aging, parenting, terrorism, global warming, recession,
> unemployment, or even the pressure of being a man or woman that is
> responsible for the epidemic of anxiety and depression in our culture. It
> is the individual's failure to adequately respond to these challenges for
> reasons of emotional and/or psychological inadequacy. Symptoms for
> which people seek relief through psychotropic medication and to which
> the pharmaceutical ads appeal are thus reinterpreted as personal failures
> and then recontextualized as illness. (Rubin 375)

The purpose of this decontextualization is produce the assumption that the ailment is only curable through pharmaceutical intervention, because "by localizing pathology within the person rather than in the external factors that give rise to them, decontextualization'serves to reinforce and legitimize social attitudes and relations [such assexism and alienating working conditions] which may actually contribute to the

problems these [medical] products target'" (Rubin 376). This combination of marginalization and decontextualization, both aspects of the modern mental health care industry, ironically (or perhaps purposefully, from a cynical perspective) make treating depression more complex ultimately because the language used to describe the diagnosis and treatment are filled with Wittgensteinian nonsense, such that vague expressions of abstract concepts has replaced the visceral emotion of depression.

The most visible driving force behind this corrupt commodification is Direct-to-Consumer Advertising (DTCA), a relatively recent implementation that is largely responsible for the blurring vernaculars and nonsense had in mental health care present in the upcoming DSM 5. In 1971 at a United Nations convention, all present nations (including the United States) signed an agreement banning DTCA of pharmaceutical agents, a ban that was lifted in 1997 by the Food and Drug Administration (Rubin 373). This lifted ban had monumental affects on pharmaceutical advertising, seen through the drastic rise in spending, from $791 million dollars the year before the ban was lifted to $2.4 billion four years after the fact (Rubin 378). This vast increase in spending translated into dramatic increases in profit, as it was estimated that for every dollar spent on DTCA, the pharmaceutical companies reaped $1.69 to $2.51 dollars in return, proving further incentive to reduce mental ailments to commoditized medical conditions (Rubin 378). As an example of the manipulative nature present in DTCA, the one year period following the September 11th attacks, spending on pharmaceutical agents for depression and anxiety significantly increased, with some companies featuring "flags, candles, and firemen," in an apparent effort to take advantage of the dualistic rise in patriotism and anxiety (Rubin

377). This increased spending in DTCA translated directly into a 20% increase in the number of prescriptions for the main three drugs (Prozac, Paxil, and Zoloft), meaning a rise in profit of $499 million dollars for the pharmaceutical companies (Rubin 376). Ultimately, this abuse of language provided through DTCA undermines the efforts of mental health care providers, because through the separation of depression from the individual into a strictly medical entity, the personal relation to individual emotional responses is lost, causing a fragmented sense of self-identity and ultimately an increased difficulty in treatment.

The advent of DTCA marked not just a shift in advertising practice, but also a change in deeply held cultural perspective on depression as a disorder in general, from a stigmatized to commodified idea. Examining patient's retrospective narratives on depression treatment is one primary source of insight into the attitude of antidepressants and the overall notion of depression treatment. Researcher's examining this perspective found that "Although most people claimed that they felt as though they 'know tons of people on antidepressants,' many found it difficult to think of more than one person that shared this information," especially before DTCA had in 1997 (Smardon 72). This reluctance to share personal information on depression resulted from a cultural stigma placed on mental illness in general, such that "even family members may keep their antidepressant consumption a secret" until it was necessary to tell, showing that a certain amount of shame or embarrassment was tied to the notion of mental illness (Smardon 72). However, through the direct injection of medical terms for depression into the common vernacular through DTCA, pharmaceutical companies reduced the stigma to

talking about depression, replacing it rather with the idea of commidification: "These relations constitute a response to commodifying forces and this response reconfigures the dynamics of stigma." (Smardon 78). This combination of depression-as-entity and commodification of treatment ultimately led to a warped perspective on the ailment, creating a confusion in patient self description digressing to an expression of infection rather than an emotional state:

> I didn't like the word depression. I thought it was terrible. In my hyper literary state I thought it was an awful word, you know, I preferred melancholy you know. Because that had more of a literary history too it, so I thought OK. But I was very resistant to the idea that what I had was clinical depression. So to me what I had was hypersensitivity to the side of life that ... the dark side, the void, that life was just a painful experience. That's what I had, I didn't have depression. I didn't really admit that I had depression for a few years. Even when I was in the hospital I wasn't willing to admit that I was just one of many many people that suffered from this. (Smardon 77).

The above quote, an actual narrative from a patient going through the diagnostic process, highlights the confusion and difficulty accepting the terminology associated with the ailment after DTCA, further showing the unnatural feeling that accompanies a depression diagnosis.

Patient's difficulties on dealing with depression are further expounded through doctor patient narratives, highlighting the linguistic difficulties plagued by the reductionist conception. In one patients case case, not so unique among depression

sufferers, she was struggling as the efficacy of her current medication was beginning to wear after many years of successful treatment, causing her to again visit with her doctor for reevaluation: "I went to him out of desperation one last time. And I said, 'BuSpar is not working.' I said, 'Why aren't you putting me on another antidepressant?"(Karp 56). This narrative of requesting different pharmaceutical agents from their doctors when the current medications seemed ineffective was a common occurrence, an example of patients and doctors one tract approach to fixing depression, and additionally their apprehension to try other avenues of treatment. The patient quoted above continued to describe her experience with, "'This guy doesn't know what the hell he's doing.' I thought he was experimenting with me. And he thought he knew everything" (Karp 56). While reductionism is not solely to blame for malpractice, the language used in a reductionist paradigm, where depression is classified solely as a neurochemical disorder, does enable abusive treatment of patients, as seen here. If the disorder is reduced to an abstract entity, then the laboratory through which to experiment its extradition becomes the patient.

Recognizing the poor treatment this doctor was providing, the above patient (Emily) transferred to a new physician with language use sensitive to the human aspect of mental health care. Emily described this new doctor as someone who "really cared about me and wanted to see me get better," and that "her gentle mannerism, her voice…when I started seeing her she would call me at home to see how I was doing" (Karp 57). Both of these comments are resounding examples of how simple altercations made in the language used throughout treatment can have profound affects on the lives of patients,

even before addressing the fundamental language behind the theories of mental disorders. Ultimately, this experience, a commonality seen amongst other depression narratives, showed "people feel better when their doctors see them as whole persons rather than as just a bundle of symptoms," reinforcing the importance of attention to language use in mental health practice. This final comment, stressing the aspect of "whole person," is particularly fitting, because it brings to mind the initial discussion on the mereological fallacy, where patient attributes are ascribed illogically to reduced components. As seen with her first doctor, the physicians who commit this mereological fallacy deliver markedly worse care for the patient, seen in the reoccurring symptoms and additional emotional angst shown.

As Wittgenstein reminds us, "one of the most dangerous ideas is that we think with or in our heads" (*The Big Typescript* 173ᵉ). Contrary to the often held adage of "using one's head," Wittgenstein says that "to say that thinking is simply an activity of the mind, as speaking is of the mouth, is a travesty (of the truth)" (*The Big Typescript* 173ᵉ). Accordingly, to act in such a manner that supports this language, as in treating patients through reductionist methods, likewise disregards a certain aspect of truth, namely that of patients humanity. Understanding this, the goal linguistically at least, is not to obtain ever-greater levels of cleverness through reductionist attributions, but rather to gain an appreciation for complexity within the human process.

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