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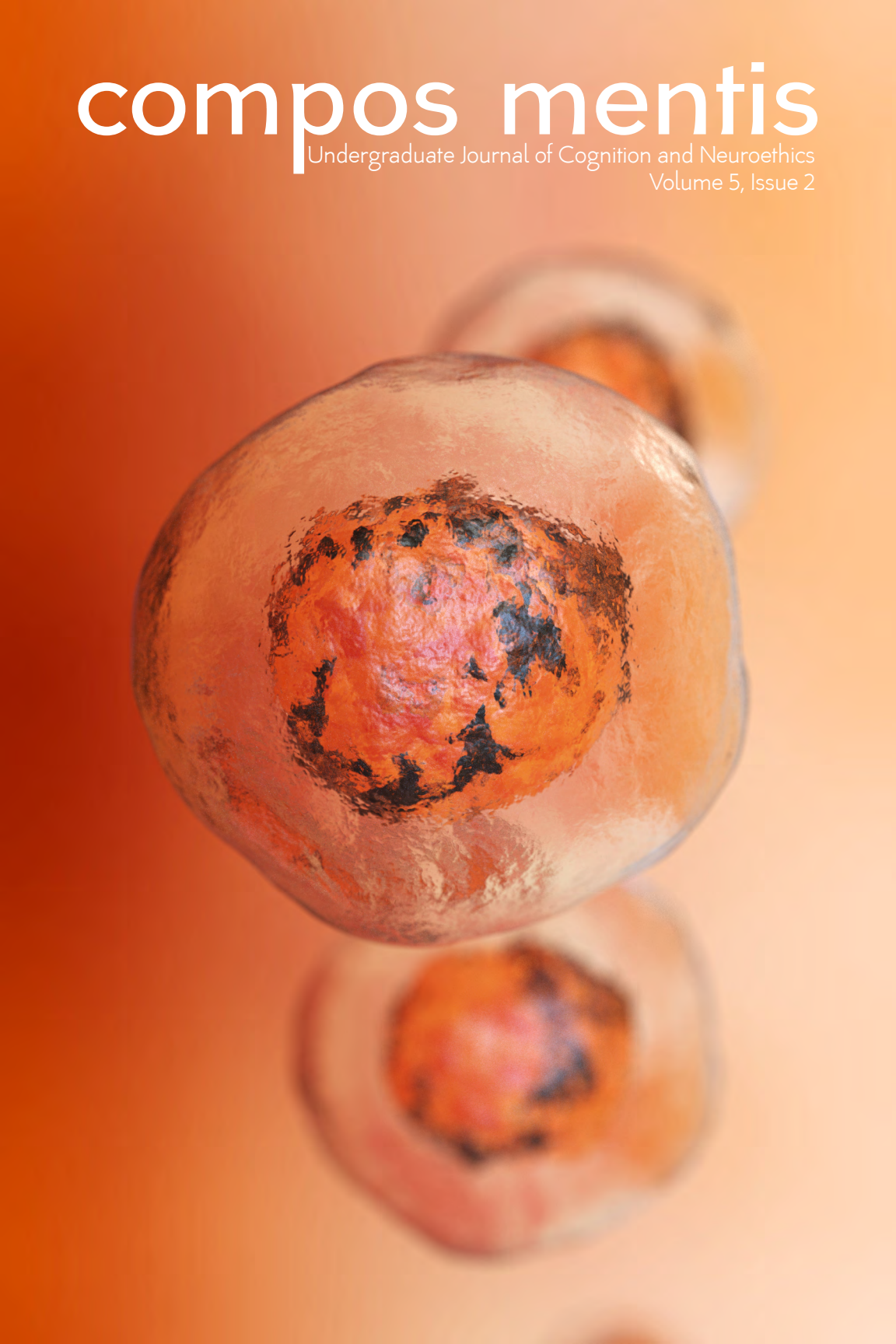

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Can Neuroscience Comment on Whether We Have Moral Responsibility?

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ABSTRACT
This essay discusses the extent to which findings in neuroscience could inform whether or not humans are morally responsible for our actions. First, I argue that the question of moral responsibility maps directly onto the question of free will. Next, I examine two opposing philosophical views on the link between free will and determinism. The incompatibilist position holds that freedom and determinism are mutually exclusive; under this view, we find that science can offer no insights as to whether we have free will, as it can neither prove determinism nor demonstrate freedom. The compatibilist view holds that free will may coexist with determinism; this is accomplished by loosening the metaphysical criterion for freedom. On this view, modern neuroscience can study free will in a limited sense, by conceptualizing free will in terms of the conscious vs. unconscious components of decision-making. I examine several landmark findings of neuroscience, discussing varying interpretations of these results in the context of the greater philosophical tradition. While free will as a metaphysical question is likely to remain untouched by scientific evidence, the findings of neuroscience have certainly proved capable, under the limited compatibilist view, of addressing longstanding popular concepts of conscious will.

KEYWORDS
Moral Responsibility, Free Will, Compatibilism and Incompatibilism, Determinism, Quantum Mechanics, Libet Experiments, Neuroscience

> I am the master of my fate / I am the captain of my soul.
> *William Ernest Henley, "Invictus"*

Free will is dear to us. Arguably one of the greatest motivators of human progress through the ages has been a sense of unlimited self-determined potential—the sheer force of human will rebelling against the maneuvers of fate. Entire civilizations rise and fall based on the principle of unalienable rights owed to every human by mere virtue of their status as a free agent in the world. The entire judicial system hinges on a principle of moral responsibility, and most every religious system in some way acknowledges that we are accountable for our deeds, whether good or ill.

William Ernest Henley captures with chilling resolve the innate human desire for control. Under an alternative interpretation, however, these lines mask an undertone of desperation: backlash to the deep-seated insecurity that we are somehow purely at the mercy of our circumstances. For centuries, philosophers have wondered to what extent, if any, our apparent free agency in the world coexists with the seemingly deterministic structure of everything else around us. Despite the pragmatic need to hold people legally responsible for their actions, and despite the ubiquitous conscious experience that we make hundreds—if not thousands—of freely willed choices every day, a lurking question remains: are we genuinely responsible for our actions, or are we coerced into them by the inscrutable forces of fate? In other words, do we truly have free will? This essay addresses whether findings in neuroscience could answer this question.

First, I will show how the question of moral responsibility directly maps onto the issue of free will. Next, I will discuss two opposing philosophical treatments of free will: compatibilism and incompatibilism.[1] I will argue that under the incompatibilist view, no solid conclusion can be reached as to whether we have free will. Then I will demonstrate how certain findings of neuroscience, when interpreted under the compatibilist view, have indeed nuanced our understanding of conscious free will.

1. The aim of this essay is not to defend either of these two views; my purpose is simply to discuss what each position allows us to conclude about free will.

THE PHILOSOPHICAL PROBLEM

What makes a person 'morally responsible'? Generally, there are two notions linked with the term: "(i) the having of a moral obligation and (ii) the fulfillment of the criteria for deserving blame or praise (punishment or reward) for a morally significant act or omission" (Honderich 2005, 'responsibility'). These notions are linked: praise or blame can be conferred based on whether moral obligation is fulfilled or neglected (Honderich 2005).

Praising or blaming someone for an act either encourages or discourages the repetition of that act in the future. Thus, there is some sense in which moral responsibility presumes that if someone were offered the same choice again—or a sufficiently similar choice—they would have the ability to choose otherwise (Flanagan 1996, 63). This is precisely the link between moral responsibility and free will. If I have free will, then I alone am responsible for selecting any particular action from a set of available actions. Roderick Chisholm explains that free will would mean "each of us, when we act, is a prime mover unmoved. In doing what we do, we cause certain things to happen, and nothing—or no one—causes us to cause those events to happen" (Chisholm 1964, 12).

So, the argument that moral responsibility arises directly from free will is as follows:

> P1: If A causes B to happen, and nothing causes A to do so, then A alone is responsible for B.
>
> P2: If humans have free will, then we cause things to happen and nothing causes us to cause those things to happen.
>
> C: If humans have free will, then we are responsible for everything which we cause to happen.

We can argue the opposite in the absence of free will by the same token. If we do not have free will, then none of our actions are 'uncaused' in the sense above; rather, every decision or action is simply a link in an unbroken chain of deterministic cause and effect. If this is the case, then we cannot be held morally responsible for our actions any more than a car can be held morally responsible for a car accident. A person who commits a murder, for instance, does not actually make this decision but is coerced into it—they are simply the murder weapon in

the hands of unseen precedent causes over which they have no control.

So, we have established the following connection: an agent is morally responsible for its actions if and only if it is a free-willed agent. By showing that these two concepts go hand in hand, the original issue—whether we have moral responsibility—is reduced to an equivalent question: do we have free will? This is the question we will seek to answer going forward.

As previously alluded to, the issue of free will is closely related to that of determinism. Aptly put, determinism holds that "all events without exception are effects—events necessitated by earlier events" (Honderich 2005). If this is the case, the whole universe is, per William James' famous imagery, a fixed 'iron block' of causality in which the future is equally immutable as the past.

Traditionally, philosophical discourse on the relationship between free will and determinism has fallen into two camps. Incompatibilism holds that if determinism is true, humans cannot have free will; on the other hand, compatibilists hold that we can accept both free will and determinism, most often by arguing that our actions can be 'caused' without being 'coerced' (Honderich 2005).

THE INCOMPATIBILIST APPROACH

It appears that the incompatibilist could easily have their answer to the free will question by showing that determinism is true: if all is determined, then we have no ability to choose otherwise. Ergo, free will does not exist. The chemical and electrical processes of the brain are no exception to the rigid laws of cause and effect; all thoughts, words, and deeds alike are meticulously orchestrated by the same physical dynamics which govern the motion of planets and the toppling over of a sequence of dominoes.

The problem with this is that no scientific experiment could ever show that determinism is true: any such effort is doomed to stop short of certainty due to the problem of induction. No matter how regularly we observe determinism to hold in any particular instance, logic does not warrant the conclusion that it is an inviolable universal law. By its nature, scientific induction is only capable of falsifying the thesis of determinism—never verifying it.[2] Thus, the incompatibilist

2. One might object to this, saying that empirical evidence in favor of determinism can be amassed to the point at which determinism is so highly probable that one may reasonably believe that things are so. Naturalism—the predominant scientific worldview—indeed takes this to already be the case. I have no issue with this. A high degree of evidence-based belief, amounting to *practical certainty*, is distinct from absolute metaphysical certainty about determinism. My

view cannot truly say with certainty that we have no free will; it can only hold that we do not have free will if determinism is unequivocally true, the latter being a fundamentally unprovable presupposition.

On the other hand, if the incompatibilist were to find that determinism is not true, this still would not prove positively that we have free will. This is because a system could be indeterministic in two different ways: (i) due to genuine agency or (ii) due to pure chance.

Grant for a moment, despite the enormous practical difficulties, that we can set up a neuroscience experiment to show that the brain is indeterministic. Imagine we can somehow isolate a brain (and any necessary surrounding environment) in such a way that it is totally undisturbed by outside activity. Further, entertain for a moment that—contrary to the predictions of quantum mechanics—we can measure the precise state of the entire 'brain-system', down to the very last particle, without disturbing it in the slightest. Absolute determinism dictates that any system, when set up just so, will evolve in time in a completely predictable way; whatever conditions there are at the onset provide a fixed description of what happens at all other times.[3] All it would take to falsify determinism would be to set up two separate trials starting with identical systems, and, after a fixed period of time, discover that something different resulted in each case.

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argument concerns only the latter.

3. For instance, given the complete 'state' of a flying projectile (a description of both its position and momentum), we can predict where it is going *equally well* as where it came from. This 'both-ways' predictability is a hallmark of any deterministic system, resulting from causal symmetry. From a purely physical standpoint, the cause-effect relationship traveling forward in time is indistinguishable from the effect-cause relationship traveling backward in time. The perceived *direction* of causality is dictated by nothing more than the direction in which the arrow of time is classically defined (that in which entropy increases as a system evolves).

   Under the traditional (Copenhagen) interpretation of quantum mechanics, such predictive symmetry does not hold: prior to observation, a system is described by a 'wavefunction' or probability distribution; after observation, as a single particle. We can only make probabilistic predictions about how the wavefunction will 'collapse' upon observation. As state information is discarded in the collapse, such predictions can only be made forward in time across this event. Without a one-to-one mapping of possible states from each moment to the next, the system no longer undergoes an invertible transformation through time. This interpretation of quantum mechanics paints a fundamentally indeterministic picture of the world in which causality, as we know it, is violated.

Now let us perform our fantastical experiment. We set up identical brain systems as aforementioned, and, as hoped, we observe different outcomes in each case! We collect our Nobel prize. We have produced incontrovertible evidence that decisions—including moral ones—are not deterministic.[4] However, our demonstration of indeterminism is still a far cry from empirical proof for the positive existence of free will. In this fantastical experiment, two possible explanations remain for why the brain-system had the ability to choose differently. First, perhaps we witnessed true agency—the brain exercised its free will and chose differently in each trial. However, it could equally be the case that no free will was involved: the difference arose due to pure chance. The traditional interpretation of quantum mechanics suggests that the universe is fundamentally probabilistic[5]—a particle's behavior, upon observation, seems to be dictated by nothing but chance. In our experiment, then, perhaps the brain-system (neurons, atoms, particles, and all) simply evolved differently in each trial due to randomness; the differential "decisions" each occurred by dumb luck. Of course, this would be greatly removed from anything resembling genuine free will—this type of agent would bear no more moral responsibility than one which could only make moral decisions by rolling dice (Honderich 2005).

Thus, the incompatibilist reaches an impasse: determinism cannot be proved true, and even falsification of determinism leaves the free will question unresolved. If we accept the incompatibilist view, there is no definitive way to show whether we have free will, and, consequentially, no finding—in neuroscience or otherwise—could decide whether or not people are morally responsible for their actions.

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4. A thoughtful reader might point out that an experiment involving far less than an entire brain-system could serve to falsify determinism—witnessing even a single poorly-behaved electron would do the trick. I stand by the brain example because it gives a fairer chance to an experiment which not only disproves determinism but positively demonstrates free will in a human-like agent. Falsifying determinism is theoretically possible. Yet, even this highly idealized experiment fails to show that free will exists, as I shall presently argue.

5. Or, at least, the Copenhagen interpretation holds that *our predictions* about a physical system can only be fundamentally probabilistic—even with perfect knowledge of the initial conditions. An interesting essay might explore whether this simply equates to a sort of *epistemological* indeterminism, distinct from any metaphysical commitment.

THE COMPATILIBILIST APPROACH

There is an alternative view, however. Compatibilism—as the name implies—seeks to harmonize free will and determinism: Owen Flanagan calls it "the position that the reality of voluntary action is fully compatible with an analysis of such action as caused" (Flanagan 1996, 57). For compatibilists, determinism need not spell out the death of free will; in fact, free will could be argued for or against whether or not determinism is true.

However, if the answer to the free will question is not based on establishing determinism or non-determinism, where can we look? Neuroscientists have looked to gain insight by turning directly to the supposed 'seat of agency': the brain. Questions of determinism are all but ignored in the neuroscience literature, which instead often focuses on analyzing the causal relationships between unconscious neural activity, conscious decision making, and resulting actions. An empirically workable definition of free will only requires that conscious decisions cause actions, not that those decisions themselves are metaphysically uncaused (Carruthers 2007, 198). Thus, when neuroscientists ask whether we have 'free will', they are perhaps asking whether we have conscious will: are decisions ultimately made by neural processing which occurs at the conscious or subconscious level? This approach—a form of compatibilism—allows neuroscientists to seek out empirical evidence for or against 'free will' while sidestepping the gaping metaphysical problem of determinism.

Much debate over free will in the neuroscience community has arisen in the wake of a set of landmark experiments by Benjamin Libet (1985). In short, Libet found that conscious awareness of a spontaneously willed decision was preceded by an unconscious neurological readiness potential (RP) predicting the 'willed' motor action. From this result, he argues that conscious free will does not operate the way we often envision it, namely, making high-level selections of action from a wide range of options. Rather, our subconscious brain generates actions while conscious will merely has the final 'veto-power' to permit or prevent the consummation of those actions (Libet 1985, 551).

Libet strikes a nuanced balance by suggesting that we are not consciously responsible for our thoughts—only the resulting actions. On the one hand, he preserves naturalistic determinism by acknowledging the causal structure of an underlying RP which initializes intentions and precedes thought. At the same time,

moral responsibility can be conferred due the fact that the behavioral output is modified by a conscious decision.[6]

Alfred R. Mele is skeptical about this interpretation, challenging the association between the RP and intention. In another experiment by Libet, subjects were instructed to prepare to flex their fingers at a given clock time, and then to consciously "veto the developing intention/preparation to act" instead of following through with it (Libet 1985, 538). Here a ramp-like RP was still found, but instead of fully developing into the moment of action, it dropped off "about 150-250 ms before the preset time," suggesting that the conscious veto prevented the RP from being carried through into motor action (Libet 1985, 538). Mele argues from this that the RP cannot represent an intention to act: here, the RP is present while the subject has an intention not to act all along, and it is illogical that a subject could intend both to act and not to act at the same time (Mele 2006, 193). Thus, Mele finds Libet to be mistaken in identifying the RP as the intended action which is vetoed; furthermore, he notes that such interpretations can "quickly get out of hand" when applied nonchalantly to the nuanced philosophical issue of free will (Mele 2006, 197).

Mele instead proffers that the generation of an act can be broken down into a multi-part process that begins with an unconscious urge (the RP), yet is "directly initiated" by intention on the conscious level (Mele 2006, 199). Thus, the RP does not represent a decision or intention (in the sense that the act is set in motion at the subconscious level and can only be vetoed by conscious will); it instead represents an 'urge' which then may or may not be initiated by the will (Mele 2006, 199). Mele's alternative explanation seems to show, at the very least, that Libet's finding is far from a definitive ruling either for or against free will.

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6. One might object to the claim that moral responsibility can be conferred in this case, saying that my earlier argument only equated moral responsibility with free will in the strict metaphysical or causal sense—not with mere conscious will. I reply that even if our definition of 'free will' only entails conscious will, affirming free will for humans implies a coherent notion of moral responsibility. Recall that moral responsibility is the conferral of praise or blame in order to encourage or discourage similar future behavior. At least from the psychological viewpoint of the agent, this is an effective and sensible strategy as long as the decision is made at the conscious level. Thus the agent can be held morally responsible in a meaningful way. If the decision is made at the subconscious level, however, then a notion of moral responsibility collapses: it would seem rather torturous to punish someone for a subconscious decision. Thus, the equivalency between moral responsibility and free will holds for the compatibilist and incompatibilist alike, albeit in slightly different senses.

Interestingly, Patrick Haggard remarks that the common notion of free will—while an important aspect of our folk psychology—is incompatible with modern neuroscience due to its implication of mind-body dualism (Haggard 2005, 291). He affirms Libet's interpretation that 'free choice' is driven by unconscious processing, pointing to an experiment in which Ammon and Gandevia (1990) used transcranial magnetic stimulation—without the subject's awareness—to bias a subject's choice to flex one wrist or the other. Despite significant findings such as these, Haggard notes that conscious will has still not received nearly as much research attention as phenomena relating to conscious perception (Haggard 2005, 291). Clearly, much remains to be explored.

CONCLUDING REMARKS

Can neuroscience comment on whether we have free will and moral responsibility? It depends on a metaphysical choice of perspective. Under the incompatibilist view relating free will and determinism, it is impossible for science to ever establish definitively whether we are free. On the other hand, many neuroscientists take the compatibilist approach, studying conscious free will as a scientific question separate from the metaphysically intractable issue of determinism. On this more limited view of agency, the findings of neuroscience have certainly proved capable of commenting on free will and, consequently, moral responsibility. The Libet experiments, while not closing the case either way, are a promising early step in this investigation; at the very least, the fact that their interpretation has been so hotly contested is a testament to their significance. Though no findings have yet resolved whether we have free will, these results carry implications which have unsettled longstanding folk concepts of agency and conscious will. We can reasonably expect that the findings of neuroscience will continue to do so.

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Beyond the Mind Body Problem: A Feminist Relational Model of Mental Illness and Identity

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ABSTRACT
The philosophical "mind body problem" has for centuries captured the time and attention of many disciplines. The apparent distinctions between, and similarities of, the mind and the body represent many of the assumptions we make about the idea of personhood. In many ways, mental illness can be used to represent some of the inherent contradictions of the prevailing theories about the mind body problem, but it ultimately also can provide the basis for a framework that moves beyond the problem and takes a more holistic approach to our minds, bodies, identities, and the medical/social models. In this paper I will explore the origin, context, and relevance of the mind body problem and the contradictions it presents using the works of René Descartes and Eve Browning Cole. I will then examine possible alternative approaches to our conceptions of mind and body through the work of Thomas Schramme, Gilbert Ryle, and Thomas Szasz; and finally will establish a feminist relational view of body, mind, and mental illness based on a framework presented by feminist disability scholar Alison Kafer.

KEYWORDS
Descartes, Schramme, Ryle, Kafer, Mental Illness, Identity, Mind Body Dualism, Relational Model, Feminism, Disability

I. THE PROBLEM WITH THE MIND BODY PROBLEM

René Descartes, in what is often considered to be the origin of the contemporary mind body problem, comes to the conclusion in his Meditations on First Philosophy that mind and body are essentially unrelated to each other. While Descartes feels confident in his own mind, he decides that he cannot fully trust his body. He cannot trust his own physical sense, nor can he trust that the body itself is even "real." He ultimately decides that the relationship between physical and mental states is unknowable and that the only thing that has relevance is his mind, which he defines by his capacity to think (Descartes [1641] 1967, 31).

In her book Philosophy and Feminist Criticism: An Introduction, Eve Browning Cole summarizes a feminist critique of Descartes' mind body dualism and the dualist ideologies that both followed and preceded it in three parts:

> (1) The body's relationship to the mind… is one of… servitude; mind properly dominates its body and directs its actions while body properly obeys. (2) Mind's behavior and dispositions are, however described in terms more appropriate to masculine gender identity… while body's configurations tend toward the feminine… (3) Thus, while rationality becomes defined as a masculine project, an adorned and disciplined physicality becomes the feminine project… (Cole 1993, 67)

Essentially, by creating the Cartesian rhetoric of the mind's dominance over the body, the body's "holding back" of the mind, and the connection of the mind with the masculine and the body with the feminine, a framework has been created such that the continued perceptions of masculine dominance and feminine weakness/liability have been upheld. Non-white races are similarly viewed in terms of the body, with white women actually taking up the role of the "mind" in comparison to the implied physicality of people of color (Cole, 1993, 68). Though this dynamic somewhat complicates the original distinction, it also emphasizes the use of mind/body dualism rhetoric as a form of oppression.

Cole does not specifically mention disability, but looking at her criticism in terms of mental illness can provide further insight into the complicated framework of mind, body, and disability. If the body and mind were truly separate and unrelated entities, with the body acting as the "ghost" that controls the "machine," then mental illness would necessarily be a kind of unknown affliction of the mind,

separate and incomparable to the body. Yet we have moved toward a distinctly biological and somatic approach to mental illness in a way that we have not done with other aspects of the mind. Conditions like depression are often characterized with terms like "chemical imbalance," despite there being no known standard chemical or ratio of chemicals that cause it (Harvard Health 2009). Even our terminology of mental illness approaches it as a somatic condition. Words like "illness," "symptoms" and "treatment" indicate an approach that stems largely from a medical model. This seems indicative of our eagerness to somaticize aspects of marginalized groups such as the mentally ill, while continuing to actively uphold certain obscure notions of purity and separation for the dominant groups.

In addition to the somatic rhetoric, there is a popular notion of a kind of separation between one's mental illness and their core mind/identity/personality. Phrases like "I am not my depression" or "that's just the bipolar talking" reinforce the idea that there is some core part of us that is held back by the physical nature of mental illness. The idea of being a helpless victim of one's own biological limitations fits rather well with Descartes' original dualist perspective, but what does it mean that we are able to separate and pathologize mental illness while viewing the rest of the mind as infallible and existing above biology or medicine?

The ideas of educational accommodations, or a plea of "insanity" in court further show our willingness to separate ourselves from our mental illness in a distinctly biological/medical way. It is common to say that someone with "mental impairment" may be excused for their actions, but what about someone with a family history of/genetic disposition toward violence? It seems that, until such a predisposition has been medicalized, it not only does not count as a "valid" excuse, it also means that the moral burden falls directly on the mind of the person involved. There is also a distinct perception of agency that appears to be tied in. The underlying idea seems to be that one's agency is directly connected to the Cartesian "mind." If the mind is being "held back" by mental illness, then a person's agency, and perhaps their entire personhood is seen as flawed or altered. The lasting power of Cartesian dualism in upholding certain power dynamics is also seen in the ways in which people of color and women are often diagnosed with mental illness and institutionalized in large numbers. Of course white, upper class men are also diagnosed with mental illness (though I would argue this has more to do with access to high quality care) as well, but in general they are given considerably more agency. Where a wealthy white man may receive an official

diagnosis and treatment designed to help him individually through school or a job, a poor person of color is much more likely to receive their diagnosis and treatment through other, more systemic and dehumanizing means, such as expulsion from school, institutionalization, or conviction and imprisonment (Erevelles and Minear, 2010, 132).

Despite the apparent moral distinction, in actual practice it seems that the line between "personality" and "side effect" becomes much less clear. Someone with a cycling condition like depression may have periods of time where they are able to live without it, and view these periods of being as their true/unaffected selves. People with bipolar I disorder can be in a manic or depressive state for months, or even years and those who know them often claim that they seem like entirely different people when the switch is made, but what about someone who has something like ADHD or Autism their entire life? Is it fair to say such a person is "quirky," or distractible, or are these merely symptoms unrelated to the core/pure mind underneath?

Psychiatric medications, in many ways, have been heralded as a way to "save" people with mental illness and uncover their true selves, in a rhetoric that is distinctly reflective of the way that the medical model treats physical illness. Those on psychiatric medications however, often report personality changes as "side effects" and make claims of not feeling "themselves," again giving the impression that there is true self, and it is distinct from (or even obscured by) the pathology/biology of mental illness and medication.

II. LOOKING OUTSIDE OF THE PROBLEM

All of the examples I have provided thus far would seem to imply a contradiction somewhere down the line. If Cartesian dualism is correct, and the body and mind are two distinctly separate entities, then how can we view mental illness as a biological affliction of the mind? If dualism is incorrect and the mind is entirely biological/somatic, then why do we view certain traits such as morality, agency or core personality as legitimate; and why does our rhetoric for mental illness include language indicative of some sort of true self outside of such illness? These are all questions Thomas Schramme attempts to address in his paper On the Autonomy of the Concept of Disease in Psychiatry. Schramme begins with a look into the work of another philosopher, Thomas Szasz, who in 1974 made the impactful skeptical claim that mental illness does not exist (Szasz [1974] 2013,,

4). Szasz, by using the work of Gilbert Ryle (the inventor of the phrase "ghost in the machine"), claims that Descartes makes a fundamental category mistake in his original argument for dualism. By assuming that the people have both a mind and body, and emphasizing that they are two separate things, Descartes has put the two into the same logical category, a mistake in both Ryle's and Szaszs' views. Ryle gives the example of a logical categorization error through the example of a student going on a tour of the buildings of a university. The student then asks to see "the" university, failing to realize that the university is not one of the buildings, but a more conceptual category that the buildings are a part of (Ryle, 2009, 6). Szasz argues that, just as a building and a school are entirely different categorizations of "thing," so are the body and mind. He continues that, since body and mind are not actually in the same logical category, it is impossible for mental illness to exist given his conception that illness is a concept only applicable to the type of thing that a body is.

This argument against mental illness however, is not particularly different from one against the reality of mental illness based on Cartesian dualism. Though Szasz's point is that mental illness could only be applicable as the same type of "illness" that bodies contract if the mind and body were of the same logical category, Schramme points out that there is no real indication that the concept of "illness" can only be applied to a certain logical category (for example, one could describe a university as "old" while also describing a specific building at that university as old). This conception is not any more likely than a Cartesian view that "illness" is categorically part of the body itself, and a way of actually distinguishing the body from the mind within the same logical category.

Schramme goes on from this dismissal to formulate his own theory on mental illness and psychiatry, advocating that they "should be neither "mindless" nor "brainless," (Schramme, 2013, 3). While Schramme denies that Szasz's conception of the "myth of mental illness" is correct, he agrees with both Szasz and Ryle's rejections of Cartesian dualism as erroneously presenting mind and body as existing within the same logical category. He further rejects the eliminative viewpoint that our "folk-psychology" conception of the mind and all of its desires/beliefs/wants does not exist in any meaningful way, and the reductive viewpoint that all of our mental states can simply be reduced fully down to purely biological/physiological states, for similar reasons to the contradictions that I have previously explored. Schramme argues "the rejection of these accounts leads to the possibility of an

independent conceptualization of mental illness," (Schramme, 2013, 8). Meaning that mental illness does not necessarily have to fall into one of the categories that have created our original dilemma in the first place. Schramme does not discuss in detail what this independent conception of mental illness might look like, if it were not bound to reductionist, eliminative, Cartesian, or Szaszian ideals, but we can look to feminist scholar Alison Kafer for an idea of what this new model for mental illness could be.

III. A FEMINIST RELATIONAL MODEL OF BODY AND MIND

In the first chapter of her book Feminist, Queer, Crip, Alison Kafer critically examines both the "social" and the "medical" models of disability, in an exploration that parallels that of the mind body problem. She finds that the medical model, like the reductive or eliminative viewpoints on mental illness, takes an inflexible stance and does not account for the genuine lived experiences and day-to-day lives of people with disabilities, or for the idea of disability as identity. The social model accounts for these factors in a more comprehensive way, as a Cartesian view, or Szasz's view might, but Kafer notes that it also "erases the lived realities of impairment... overlooks the often-disabling effects of our bodies... social and structural change will do little to make one's joints stop aching" (Kafer 2013, , 7). Similarly, certain mental illnesses like depression have very real and very painful effects on one's day-to-day life, and simply claiming that depression is not real, or cannot be defined, will not alleviate its very real harm in the way that a more medical approach like medication (or other treatments) may be able to for some.

Instead, Kafer–just as Schramme does—implies that the oppositional distinction between the medical/body and the social/mind frameworks is a categorical error, and instead advocates for a more flexible and relational approach. Disability (and mental illness specifically, in Schramme's case/the case of this paper) need not be placed in a false and limiting dilemma between the biological/medical/somatic (body) and the social/unknowable/other (mind). Instead, Kafer proposes what she calls the relational (or political/relational) model of disability. The relational model acknowledges the limits of the medical model and acknowledges that built, political, and social environments have much to do with disability as it is both perceived and experienced. This relates directly to my earlier discussion of the institutionalization and criminalization of certain groups with mental illness, and more largely to the idea of somatization and medicalization as continued forms

of oppression and perceived inequality of marginalized groups like women and people of color. The political/relational model also takes a very important stance by establishing disability as a non-concrete category. Kafer wishes to see disability not as a separate, concrete condition, but as a condition that exists in a political/social context, and in relation to others. This is a similar feminist perspective to that provided by Cole, as an alternative to the more Cartesian method of associating individuality and seclusion with a type of "pure" rationality. This contextualizing of disability is crucial to the idea of mental illness, and is able to eliminate many of the original apparent contradictions of the mind body problem and mental illness, such as the flexible distinctions between personality and mental illness. Using the relational model, we can acknowledge that apparent contradictions like the emergence of both somatic and personality-based aspects of mental illness can exist alongside each other. In part because of the categorical error that puts body and mind in opposition, but also because of the inclusion of social/political factors that can account for seemingly oppressive aspects of both the social and medical models of mental illness. This model can then also account for an acceptance of mental illness as an aspect (but not the entirety of) identity, rather than placing it in opposition to one's "true" personality. Such an understanding can then lead to the idea of personality and identity being shaped by, but not limited to disability, in the same way that they are shaped by other aspects such as gender, race, or sexuality. Instead of saying "I am not my depression," someone under Kafer's feminist relational model may say something like "my depression is a part of me, but it is only one of many aspects of my identity." Similarly, someone who commits a violent crime could be viewed in court as being influenced by their genetic history, but not automatically excused or entirely culpable, and a suitable sentence could be determined based upon this framework (as has happened in the past with certain mental illnesses, but not in such a broad context).

Overall, when looking at mental illness and philosophical concepts like the mind body problem, it can become very easy to fall into the rhetorical framework of apparently necessary dichotomies. But these dichotomies, like Descartes's own conception of dualism, are not necessarily the only choices, and may fall into category errors of their own. By examining mental illness in more relational, political, and independent terms such as those espoused by feminist theorists, as well as by the acknowledging some of the negative conditions of living with it, we can begin to develop a conception of it that avoids falling into faulty categories

and instead focuses on a more holistic approach toward the nuanced interactions among disability, identity, mind, and body.

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compos mentis

The Cognitive Complexity Thesis: Refuting Multiple Objections to the Extended Mind Thesis

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ABSTRACT
Extended mind theorists claim that cognition is not bound to the brain, or even the individual, but can extend into the environment. There have been many objections against the extended mind theory, such as the coupling-constitution fallacy, the argument from the explosion of knowledge, the objection from the authority of first person beliefs and the argument from epistemic credit. I argue that one error common to the above objections is a failure to consider the cognitive complexity thesis: that cognition is attributable to complex systems consisting of one or more individuals together with external factors. Many externalists (those who accept the extended mind theory) are committed to the cognitive complexity thesis, but the objections above begin from the assumption that the cognitive complexity thesis is false, and thus that cognition can only be attributed to an individual brain or an individual person. Externalists and their critics therefore disagree on what kinds of belief-attributions one can make, which in turn impacts their disagreement over the extended mind theory. Objections to the extended mind theory do not consider the deeper role of the cognitive complexity thesis. In order to succeed in refuting the extended mind theory, those objections must address the cognitive complexity thesis.

KEYWORDS
Extended Mind, Extended Cognition, Externalism, Coupling-Constitution Fallacy, Philosophy of Mind, Philosophy of Cognition

Extended mind[1] theorists argue that cognition is not bound to the brain, or even the individual, but can extend into the environment. Since it was pioneered by Clark and Chalmers in 1998 it has risen to be arguably the most dominant position in philosophy of mind and cognitive sciences. But, throughout its rise to popularity, critics have raised many objections. In this paper I try to identify an error that is common to these objections. This error is the failure to recognize the cognitive complexity thesis, which states that cognition can be realized not only by an isolated individual person, but also by more complex systems such as groups of people, people embedded in culture and people equipped with machinery.

The structure of this paper is as follows. In the first section I set the scene for my arguments by introducing the theory of extended cognition. I briefly introduce the position as it was pioneered by Clark and Chalmers in 1988, but I quickly move on to more contemporary accounts of extended cognition. These contemporary accounts substitute the parity principle that was initially adopted by Clark and Chalmers with the notions revolving around integration of both internal and external factors in cognitive processes.

In the second section I discuss what the proper bearers of beliefs are in a framework of extended cognition. I give three possible positions and argue that externalists reject one of these, but are free to adopt either of the remaining two remaining positions. This chapter is not meant to give an adequate historical description of what Clark and Chalmers (or any subsequent externalists) took to be the proper bearers of belief. The aim is only to characterize what theoretical options are and are not available to the externalist. This section should make clear that any externalist theory is committed to the cognitive complexity thesis.

In the third section I explore the consequences of the cognitive complexity thesis. I argue that many of the influential objections against externalism arise from a failure to recognize this thesis. Most notably, the infamous coupling-constitution fallacy raised by Adams and Aizawa (2006) can be understood as motivated by a failure to recognize this thesis (or perhaps even a reluctance to accept it). Furthermore, arguments revolving around an explosion of knowledge (Ludwig 2014), the authority of first person beliefs and epistemic credit (Preston 2010), can be similarly understood.

1. In this paper I use 'extended mind' and 'extended cognition' more or less interchangeably.

I conclude that many of the objections raised by critics of externalism are ineffective, because they are based on a failure to recognize the cognitive complexity thesis. Future critics of externalism need to consider this thesis carefully when formulating their objections.

THE EXTENDED MIND

The extended mind hypothesis was first put forward by Clark and Chalmers (1998) in their canonical paper The extended mind. They argued by means of two thought experiments that cognition is not bound to the brain but can be extended into the environment. In order to illustrate the arguments I make in section two and three it is useful to cite the most famous of these two experiments here:

> Now consider Otto. Otto suffers from Alzheimer's disease, and like many Alzheimer's patients, he relies on information in the environment to help structure his life. Otto carries a notebook around with him everywhere he goes. When he learns new information, he writes it down. When he needs some old information, he looks it up. For Otto, his notebook plays the role usually played by a biological memory. Today, Otto hears about the exhibition at the Museum of Modern Art, and decides to go see it. He consults the notebook, which says that the museum is on 53rd Street, so he walks to 53rd Street and goes into the museum. (Clark and Chalmers 1998, 13-14)

Clark and Chalmers argue that Otto believes, even before he consults his notebook, that the museum is 53rd street. Their argument in this article relies on the parity principle. This is the intuition that if we would have no hesitation calling a process cognitive if it were done in the head, then we should not hesitate to call that process cognitive if it is done outside of the head either.

The parity principle is highly disputed. Critics of externalism have objected that the parity principle describes a criterion that is too weak to demarcate cognition and that it neglects the mark of the cognitive (Adams and Aizawa 2001; Adams and Aizawa 2010; Adams 2010). And even proponents of externalism have argued against the parity principle, primarily because it suggests a misleading picture of the motivation behind externalism (Menary 2010a, 6-7). Their worry is that the parity principle can be read as stating that an external process is cognitive

if it is sufficiently similar to internal cognitive processes, where it is up to the reader to interpret the appropriate meaning of 'similar'. This ambiguity has spawned literature that, in an effort to refute externalism, argues that Otto's looking at his notebook is very dissimilar to Inga's remembering (Rupert 2004). However, externalists explain, the goal of externalism was never to point to similarities between internal and external processes. Rather, it was to point out that cognition should not be understood as existing only in individuals (let alone brains), but instead as being a process in which both cognitive agents and their environment are integrated. The parity principle merely serves as a tool that asks us to think of cognition as processes with a particular function, rather than a particular location (Menary 2010a, 6-7). By no means was the parity principle intended to describe a necessary or a sufficient condition for identifying cognitive processes.

Contemporary externalists (or second wave externalists (Sutton 2010)) therefore focus on what Menary has called the integration of internal and external processes in cognition (Sutton 2010, 20). The idea is that cognition can consists of internal and external factors that mutually influence each other and are complementary in constituting the processes that we deem cognitive. According to contemporary externalists, Otto remembers where the museum is, but not because his notebook is similar to Inga's memory. Rather, it is because the notebook and Otto's remaining memory is a whole in which the integrated parts mutually influence and complement each other.

EXTERNALIST BEARERS OF BELIEF: THE COGNITIVE COMPLEXITY THESIS

In this section I explain what I call the cognitive complexity thesis. This is what critics of externalism typically fail to recognize (or perhaps better: are reluctant to accept). Consider and the following statement: "Otto walked to 53rd Street because he wanted to go to the museum and believed (even before consulting his notebook) that it was on 53rd Street." (Clark 2010, 45; Clark's emphasis in italics, my emphasis in bold).

In this statement it is claimed that 'Otto believed' that the museum is on 53rd street. But the meaning of 'Otto' in this phrase is ambiguous. There are at least three different ways to interpret 'Otto' here, and thus three different entities that we could be ascribing belief to when we assert this statement:

1. Otto, i.e. Otto as an individual isolated from his notebook, believed that…

2. The complex cognitive system containing both Otto and his notebook believed that…
3. Otto, i.e. the complex cognitive system containing both Otto (as an individual isolated from his notebook) and the notebook, believed that…

The first option is clearly different from the second and third options, as it makes no mention of the notebook. The second and third options are similar, but make slightly different claims regarding the nature of the self and the proper bearers of belief. The second option strictly speaking does not seem to support the claim that Otto believes the museum is on 53rd street. Rather, the cognitive system of which both Otto and the notebook are part believes this. The third interpretation of the statement does support the claim that Otto believed the museum is on 53rd street, and incorporates the notebook into the notion of Otto. I say more about the theoretical consequences of these different interpretations later.

First, and this is the crucial part, it is a mistake to attribute the first interpretation to externalists. Externalists would never say that Otto, as an isolated individual without his notebook, remembers where the museum is. It is easy to see why. Externalism is the attempt to argue that cognition integrates internal and external processes. It illustrates how this is the case by showing that in some cases, external factors complement our cognition. In these cases, our cognition is also dependent (to some degree) on these external factors. Trivially, if in these cases we take away these external factors, the cognitive process that depends on them is destroyed. That is to say, if we take Otto's notebook from him, he would not remember where the museum is anymore. At this point, it may seem so clear that the first interpretation should not be attributed to externalists that I might be suspected of arguing against a strawman. But in section three we see that many objections to externalism are in fact dependent exactly on ascribing the first interpretation to externalism.

Then, regarding interpretations two and three. Both interpretations can fit an externalist framework of cognition. The second interpretation ascribes belief to a complex cognitive system consisting of a cognitive agent and external factors. The drawback of this interpretation is that this may seem counterintuitive, as we usually think of beliefs as belonging to individuals rather than systems (although I present some reasons to challenge this thought near the end of this section). The upshot is that it is compatible with a traditional notion of the nature of the self, in which a self is confined to the limits of an individual body. The third interpretation

gives up on this traditional picture. It replaces this with a notion of the self as an integrated whole of an individual body and (parts of) its environment. The upshot is that by adopting this untraditional notion of the self, it can preserve the traditional idea that beliefs only belong to individuals. So in the second interpretation we adopt an untraditional notion of what the proper bearers of beliefs are and preserve a traditional notion of the self, and in the third interpretation we adopt an untraditional notion of the self but preserve a traditional notion of belief bearers.

Both the second and the third interpretation support the externalist idea that cognition is not confined to an individual body, but can instead be attributed to more complex cognitive systems. I call this essentially externalist tenet the cognitive complexity thesis: cognition can be attributed to complex systems consisting of one or more individual bodies and external factors. It is only the first interpretation, which insists on ascribing cognition to an individual body, which fails to adhere to the cognitive complexity thesis.

At this point we should fix some notation for the rest of this paper. When I want to refer to the first interpretation of 'Otto believed' (or a position that could adopt this interpretation) I say the cognitive simplicity thesis. This is meant to be the denial of the cognitive complexity thesis. Further, I take both the second and the third interpretation of 'Otto believed' to be variants of the cognitive complexity thesis. If I want to refer to the second interpretation I talk about the cognitive complexity thesis with regards to systems, whereas if I want to refer to the third interpretation I talk about the cognitive complexity of persons. These terms are meant to explicate what is thought of as being a complex and cognitive, a system or a person. In section three, when I address objections to externalism, I generally start my rebuttals with an appeal to the cognitive complexity of systems and then show how my rebuttal can be modified to suit the needs of those who adopt the cognitive complexity of persons.

The aim of this paper is not to defend (any variant of) the cognitive complexity thesis. It is merely to point out that many objections to externalism fail to recognize it. Nevertheless, it should be stressed that the cognitive complexity is widely accepted in (social) cognitive sciences. Scientific studies show that theories assuming group cognition or collective cognition (i.e. cognition that belongs not to an individual but to a group of individuals) can explain various social processes that cannot be explained without the assumption of cognitive complexity (Barnier et al. 2008; Sutton et al. 2010). Further, scientists argue that

cognitive processes that can be ascribed to individuals can generally also be ascribed to groups of individuals (Theiner, Allen, and Goldstone 2010). Of course, this is not a definitive argument for the cognitive complexity thesis. For one thing, the social cognitive sciences generally accept groups of people as bearers of cognition, but complexes consisting of individuals and inanimate environment are not (yet) explicitly accepted as such. But, the usefulness of (parts of) the cognitive complexity thesis in science does suggest that it should not be rejected without argument.

CONSEQUENCES: DEBUNKING MULTIPLE OBJECTIONS TO EXTERNALISM

In this section I argue that many of the objections to externalism are based on a failure to recognize the cognitive complexity thesis. This results in incorrect belief attributions. These objections take these incorrect belief attributions to discredit externalism. Whereas in fact the incorrect belief attributions do not stem from externalism, but from the failure to recognize the cognitive complexity thesis. If this thesis is properly recognized, the incorrect belief attributions are resolved, and so are the alleged objection to externalism. In what follows I refute the following objections: the coupling-constitution fallacy, the objection from an explosion of knowledge, the objection from the authority of first person beliefs and the objection from epistemic credit.

The Coupling-Constitution Fallacy

Adams and Aizawa (in)famously argue that externalism commits the fallacy of confusing the coupling of element A to cognitive agent B with the constitution of cognitive agent B by element A (Adams and Aizawa 2010; Aizawa 2010). Clark responded to this objection elaborately and to my mind convincingly (Clark 2010). Instead of reciting this discussion of the coupling-constitution fallacy, I would like to investigate the motivation behind this objection. Adams and Aizawa open the article in which they introduce this fallacy with the following pun: "Question: Why did the pencil think that 2+2=4? Clark's answer: Because it was coupled to the mathematician." (Adams and Aizawa 2010, 1).

I think this pun is very helpful in tracing the motivation behind the coupling-constitution fallacy objection. Adams and Aizawa think that when a mathematician uses a pencil to complement her cognitive process, the externalist considers

the pencil (or that what is written with it) to be a part of the cognition of the mathematician. But, they reason, then the externalist has no basis to deny that the mathematician (or his cognition) is a part of the cognition of the pencil. They conclude that externalists are committed to the view that if a pencil is used in a cognitive process, this pencil can be attributed cognition.

However, Adams and Aizawa fail to recognize the cognitive complexity thesis. Because in fact the externalist does not consider the pencil (or that what is written with it) to be a part of the cognition of the mathematician, if the mathematician is interpreted as an isolated individual. This would be to assume the cognitive simplicity thesis. Rather, externalists would say that the pencil (or that what is written with it) is a part of the cognition of the complex cognitive system consisting of both the pencil and the mathematician (in accordance with the cognitive complexity of systems). Or, that the pencil (or that what is written with it) is a part of the cognition of the mathematician, but the mathematician is actually an integrated whole containing the pencil (in accordance with the cognitive complexity of persons).

For externalists that accept the systematic cognitive complexity theses, it is strictly wrong to suggest that a pencil thinks that 2+2=4. Rather, a pencil can be part of a complex cognitive system that thinks that 2+2=4. For those that accept the personal cognitive complexity thesis, it can even be true that the pencil thinks that 2+2=4, as long as we consider the pencil to be an integrated whole containing also the mathematician (although this would constitute a very unconventional conception of penhood). In either case, the coupling-constitution fallacy is not an effective objection against externalism.

To make this same point while abstracting away from the pun above: the coupling-constitution fallacy objection claims that externalists confuse the coupling of element A to cognitive agent B with the constitution of cognitive agent B by element A. But this is a mistaken picture of the externalists' view. Rather, externalists claim that if an element A complements the cognition of cognitive agent B, A and B together constitute a wider cognitive system C (which can be interpreted as a system or a person, depending on which variant of externalism is adopted). Adams and Aizawa adopt this mistaken view of the externalists' view because they fail to recognize the cognitive complexity thesis.

The Explosion of Knowledge

This objection concerns individuals who use google maps in a manner similar to how Otto uses his notebook (Ludwig 2014). That is to say, whenever they want to find the location of a museum, they remember that such information is stored in google maps, access google maps and find the correct location. The objection concludes that according to externalism, these people know the location for every museum, even of museums in countries they have never visited. This explosion of knowledge is deemed implausible and thus a bad feature of externalism.

This objection is somewhat problematic because it is not clear that google maps and the mentioned individuals are integrated into a system in the sense required to establish cognition according to externalism. For example, this does not seem to be a case of mutual manipulation or internal and external factors that complement each other. Rather it seems to be the case that google maps complements these individuals, but not the other way around.

But even if we allow this problem, this objection fails because it does not recognize the cognitive complexity thesis. This is evident from the fact that the objection judges it to be problematic that individuals have extraordinarily large amounts of knowledge. But externalists would agree that it is problematic if individuals, isolated from google maps (i.e. in accordance with the cognitive simplicity thesis) have extraordinarily large amounts of knowledge. However, it is much less problematic if a cognitive system consisting of an individual and google maps has extraordinarily large amounts of knowledge though, because google maps contains extraordinarily large amounts of information. So the explosion of knowledge can only lead externalism to an implausible solution if it assumes the cognitive simplicity thesis. But since externalism rejects this thesis, is not hurt by an explosion of knowledge. Rather, it provides a framework to understand in which sense today certain companies, sciences and humanity as a whole have so much knowledge even though no isolated individual has much more knowledge than individuals living a century ago.

The Authority of First Person Beliefs

This objection relies on the authority that people have over their own beliefs.

> My claim, then, is that people do have a limited but real first-person authority about what it is they believe. (…). However, the sorts of real-world resources and processes which, according

> to the extended mind thesis, can partly constitute one's beliefs aren't ones about which we can have first-person authority, on pain of our being authoritative about contingent matters of fact concerning the "external world." Consider the contents of Otto's notebook, for example. Of course, upon being asked, Otto is the authority on whether what's written in his notebook is indeed what he believes. But he isn't authoritative about the contents of the notebook before he has consulted it. (Preston 2010, 360)

The worry expressed by Preston is that the authority that pertains to first person beliefs does not pertain to the sort of beliefs that externalism ascribes to Otto and his notebook. I argue that this is not a problem, and it is easy to see why. In accordance with the systematic cognitive complexity thesis, externalism does not ascribe beliefs regarding the content of the notebook to the person Otto. It ascribes beliefs to the complex cognitive system containing Otto and his notebook. Since this system is not a person, the beliefs it has are not first person beliefs. So even if we accepts that a person always has authority over his first person beliefs, we should not expect that every system has authority over its beliefs.

Externalists that adopt the personal cognitive complexity thesis need to be slightly more elaborate to refute this objection. They should say that although a person has authority over some of his first person beliefs, but not all of them. They might suggest that a person only have authority over their isolated/non-integrated beliefs, i.e. those beliefs that she has solely in virtue of being an isolated individual. Then, Otto has authority over the beliefs he has in virtue of being himself, but not over the beliefs he has in virtue of being an integrated whole containing his notebook.

Epistemic Credit

Finally, the objection from epistemic credit.

> One of these [everyday psychological practices] is simply that the abilities and achievements in question are credited to people (or other organisms), not to brains, and at best only derivatively to the arrangements in which organisms and their brains are embedded. (Preston 2010, 367)

This objection claims that if an individual uses an external arrangement (such as a calculator) to perform an epistemic action, we give credit to the individual, not to the device.

The first response to this argument must be that in giving credit to people, the arrangements in which they are imbedded actually play a huge role. The amount credit we give to someone who calculated the square root of 47 depends heavily on whether or not she used a calculator. The second response is that this objection does not challenge externalists that accept the personal cognitive complexity thesis. According to them we do indeed credit an individual for the abilities she has in virtue of her embedding, because the individual (partly) is her embedding.

CONCLUSION

In this paper I argued that many objections directed at externalism stem from a failure to recognize the cognitive complexity thesis. This is to say that these objections mistakenly assume that within a framework of extended cognition, individual bodies are the only appropriate bearers of cognition. A proper understanding of externalism shows that cognition is not limited to such simple entities but can in fact be attributed to complex entities consisting of one or more individuals and external factors. Critics of externalism should recognize the cognitive complexity thesis when formulating objections to extended mind theory.

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compos mentis

Ethical Considerations and Implications of Smart Drugs

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ABSTRACT
The current generation marks a milestone in the development and use of methods to extend and improve our cognitive abilities, from the external repository of the internet to the increasing focus on cognitive enhancers. One of these methods is through drugs. Drugs exist in many classes from stimulants and painkillers to hypnotics, which cut across lines of legality, and are used across cultures for different uses such as mental disorder treatment, improved performance in military personnel, and educational purposes. Drugs play a role in many facets of our lives, often in a way that enhances our work ethic and the way we feel. While naturally occurring cognitive enhancers (CEs) such as coffee and other caffeinated drinks have been around for thousands of years, a new class of human-made drugs known as nootropics is defining a multi-billion dollar market: drugs specifically developed to increase cognitive abilities and enhance learning and memory in healthy people. Questions have importantly arisen about whether drug-based cognitive enhancers that improve our ability to process information may just be an extension of technological inventions like the internet. From an ethical perspective, it can be argued that these drugs provide us with a new, unparalleled, opportunity to improve the human mind. Unlike the large majority of psychopharmaceutical substances, these supplements are marketed to the healthy, general public as lifestyle brands and these so-called 'smart drugs' lack clarity in their potential long-term negative consequences. Smart drugs are designed to enhance cognition in healthy people, and may do so via alterations in perception, mood, or consciousness. As the use and development of smart drugs increases, we must seriously consider the ethical issues associated with such use, including (but certainly not limited to) their perceived societal value, their safety and distribution, and whether fair access to such drugs is necessary. While I will being using front-line comments to further illustrate some of these ideas, they are not radical opinions in that they are supportive of the main underlying research and claims.

KEYWORDS
Smart Drugs, Cognitive Enhancers, Neuroethics, Nootropics, Learning Acquisition, Psychostimulants, Medical Ethics, The Role of Medicine, Psychological Treatments, Competitive Fairness

SMART DRUGS ENHANCE COGNITION AND THEY ARE DECADES OLD

Contrary to popular belief, the concept of 'smart drugs' emerged decades ago. Romanian psychologist and chemist, Corneliu E. Giurgea, coined the term nootropics in 1972 to describe a class of psychotropic drugs that "characteristically interfere with the higher telencephalic integrative activity by a direct and selective attention" (Giurgea and Salama 1997, 235). Since then, different classes of drugs have emerged under smart drugs. For example, drugs such as Adderall have become popular treatments for attention deficit hyperactivity disorder (ADHD) as they increase alertness, reduce impulsivity, and improve concentration in these patients (Sahakian and LaBuzetta 2015, 67). More recent smart drugs such as modafinil have been developed and used to treat drowsiness and daytime fatigue. We will see that the clinical evidence for these drugs achieving these effects is clear, but healthy individuals report feeling more attentive and energetic when using them, too. Psychologist and professor of clinical neuropsychology Barbara Sahakian writes that these chemicals affect the catecholamine system, which produces increased executive functioning, "improving their abilities to focus their attention, manipulate information in working memory and flexibly control their responses" (Sahakian et al. 2008, 702). One study from which Sahakian draws this conclusion looks at Adderall's effect on selective enhancement of memory consolidation in healthy volunteers (Linssen et al. 2011, 614-615). Depending on the smart drug type, they work in different ways and by different mechanisms, but all have the same general intended effects to increase focus and learning acquisition. While the smart drug's ability to expand psychological capability in healthy humans should be embraced, it should also be evaluated on a number of ethical questions.

CONCEPTUAL CHALLENGES TO SOCIETAL ACCEPTANCE: NATURAL VS. UNNATURAL CE

One ethical issue associated with cognitive enhancing drug use outside a clinical purpose is whether the intervention is natural or artificial. As Sahakian states, "Drugs may seem distinctive among enhancements in that they bring about their effects by altering brain function, but in reality so does any intervention that enhances cognition" (Sahakian et al. 2008, 703). Despite this analysis, people have a tendency to make negative moral judgements such as the belief that artificial is worse than natural or that taking a drug is bad. For instance, one study found

cognitive enhancement drug use to be considered more wrong and threatening if drugs were artificial rather than herbal regarding drinks and injections. Specifically, on a moral judgment scale ranging from scores 0 (perfectly okay) to 5 (extremely wrong), 44 undergraduates responded with an average of 3.5 for an artificial drink compared to a 2 for an herbal drink and a 4 for an artificial injection compared to a 3 for an herbal injection (Scheske, Christel, and Schnall 2012, 512). In general, it is a fallacy to think that naturally occurring or human-made drugs are more likely to alter brain function and structure and there is ample evidence for natural interventions altering brain function in the same way as cognitive enhancing drugs. Such a moral intuition is difficult to justify when considering the role of cognitive enhancers in society. Social psychologist Jonathan Haidt coined the concept 'moral dumbfounding', which occurs when people declare a behavior wrong in the absence of supporting evidence (Hindriks 2015, 237). This seems to be an applicable case as people still remain unaware that many of the activities in which they engage affect brain function. Yet, natural interventions indisputably act on the brain to produce cognitive enhancing effects like smart drugs do.

One example of a non-drug cognitive enhancer is meditation. For example, Yoga Nidra (a relaxed meditative technique that promotes the dissociation and loss of conscious control of one's actions (Kjaer et al. 2002, 255)), was tested in one study looking at eight healthy male meditation teachers aged 31–50 with 7-26 years of daily practice. Using a C-raclopride tracer (a selective antagonist on D2 dopamine receptors) in a combined positron emission tomography (PET) and magnetic resonance imaging (MRI) study, five brain regions of interest which were previously related to cognitive enhancement were scanned: the right caudate, left caudate, right putamen, left putamen, and ventral striatum (Kjaer et al. 2002, 257). Findings revealed increased dopamine release in the ventral striatum during relaxation meditation, providing evidence for the meditators' ability to regulate conscious states at a synaptic level and influence patterns of brain activation and deactivation. Since dopamine is a neurotransmitter tied to reward-motivated behavior, these findings suggest that natural meditative practices can activate the medial forebrain reward-related circuit just like that of typical pharmacological drugs of abuse. Yet, this does not mean both alter the same behaviors, release dopamine in the same way, or imply they have the same long-term term effects. While smart drugs are human-made and meditation is natural, both natural and

unnatural cognitive enhancers may act on similar brain circuits, and so all drugs should not be considered unique in their ability to alter brain function or structure.

Again, putting aside our unbiased reasoning, we can appreciate the effects of exercise, another non-drug cognitive enhancer that acts similarly to pharmaceutical drugs. In one animal study, scientists found that running causes neurochemical adaptations in brain reward pathways in the same way as addictive drugs (Brené et al. 2007, 5). For example, opioids activate dopamine cells of the ventral tegmental area (VTA), a region implicated in the drug and natural reward circuit, which in turn stimulates the medial forebrain reward-related circuit. We know that running activates this same region and can consequently also be addictive. Voluntary exercise can have an antidepressant effect - through mechanisms that likely overlap with the aforementioned opioids - blunting physical and emotional strength, and promoting neurogenesis and other biological changes (Linden 2012, 150). In terms of cognitive enhancement, exercise "is the single best thing one can do to slow down the cognitive decline that accompanies normal aging" and it is associated with long-term improvement in mental functioning (Linden 2012, 150). Accompanying your morning cup of coffee with a drug may become just as thoughtless as running on a treadmill for thirty minutes. Ample research shows beneficial neural changes in the intervention of exercising, so why would we not accept new innovative methods that improve brain function?

CONCEPTUAL CHALLENGES TO SOCIETAL ACCEPTANCE: DRUG VS. NON-DRUG CE

It seems people are concerned about non-drug versus drug, yet for centuries, we have been using both methods with negligence. The fact that caffeine is a drug does not stop people from continuing to line up for their Starbuck's lattes and coffees each morning. Research has shown that caffeine increases alertness, mood, and motor and cognitive performance. For instance, one study investigated the cognitive and subjective effects of caffeine in combination with L-theanine, another naturally occurring ingredient in tea, and tested for improvements in attention. Forty-four participants, twenty-eight of which were female, aged between 18-34 years, were randomly assigned to a placebo or experimental group and then asked to perform various cognitive tasks. The experimental group consumed a combination of 97 mg of L-theanine and 40 mg of caffeine (Giesbrecht et al. 2010, 284). One example of a cognitive test was the two-choice reaction time

task where three symbols appear on a computer screen for 500 ms and then are replaced by a target letter (A or B) alone or with various accompanying distractor stimuli. By way of a key press, participants indicated whether the target was A or B as quickly and accurately as possible (Giesbrecht et al. 2010, 285). In the drug condition, findings showed an improvement in task switching accuracy as well as other attentional benefits. Caffeine's ability to improve the capacity of one's overall psychological functioning helps us realize the societal value of a very common artificial drug.

SOME SMART DRUGS CAN BE HIGH-RISK

One of the more significant concerns of smart drug use among healthy people is safety. Whether it is a natural intervention like meditation and exercise or a drug such as caffeine, these methods are not highly debated forms of cognitive enhancement. However, they may produce negative consequences in high doses or frequency. By virtue of these powerful negative effects, concerns regarding smart drugs' overall impact on health are certainly legitimate; accordingly, this is what we would expect every time a new medication is introduced to the market. Currently, drugs are regulated by the Center for Drug Evaluation and Research (CDER), which operates under the Food and Drug Administration (FDA). Note that while the FDA does conduct limited research, it is the responsibility of the company seeking to market a drug (the sponsor) to test it and submit evidence to the FDA that it is safe and effective. In order to gain FDA approval, the sponsor must submit evidence as part of an application and the FDA CDER claims to have very high standards for this research and evidence. Such a claim is well-founded considering the complexity of this process from testing the drug compound on animals to submitting an intricate Investigational New Drug application to the FDA. It comes to no surprise that almost all smart drug developers even bother to seek FDA approval for their products.

However, smart drugs specifically intended for a clinical purpose demonstrate research about their risks. Particularly, one of the more questionable smart drugs is methylphenidate (trade name is Adderall), which is a popular treatment for patients with attention-deficit hyperactivity disorder. Its cognitive enhancing effects are supported by discoveries in a study conducted by Elliott et al., who tested the effect of methylphenidate on the spatial working memory and planning of twenty-eight healthy males. Half of them received methylphenidate and the

other half a placebo; half of the experimental group ingested 20 mg and the other 40 mg. All participants performed tests in the same order, beginning with a verbal fluency test, a spatial span task, and spatial working memory test. Additionally, they performed The Tower of London task, an attentional shifting task, a sequence generation test, and the Rapid Visual Information Processing test (Elliott et al. 1997, 197-198). These tests focused on testing various cognitive aspects including sustained attention and explicit planning. Results showed that methylphenidate produced corresponding improvements in accuracy of performance on all spatial and planning tasks with no effect for the Rapid Visual Information Processing test. These results show that methylphenidate not only facilitated cognitive performance in relatively unfamiliar situations, but also increased the amount of response output and speed of performance by participants (Elliott et al. 1997, 202-203).

While methylphenidate increased cognitive performance, research shows that it potentially produces adverse side effects too. Alexander J. Covey, M.D., asserts, whether clinically prescribed or not, "The side effects (both short and long term) vary according to the specific nootropic drug, but using Adderall as an example, one might experience appetite suppression and unhealthy weight loss, insomnia and, more dangerously, cardiac issues including not only hypertension but arrhythmias and even sudden death" (Personal Interview 2017). Other reported minor side effects include dry mouth, repetitive movements (tics), and mild forms of depression as well as more major cases of psychosis, seizures, and previously mentioned cardiovascular events such as hypertension and tachycardia (Lakhan, Shaheen, and Kirchgessner 2012, 661). The Drug Enforcement Administration (DEA) declares methylphenidate and stimulants similar in profile as schedule two drugs, characterized by a high potential for abuse and severe psychological dependence. Despite widespread use of methylphenidate in ADHD patients since the 1950's, research about its long-term effects is not well grounded and is lacking. Nevertheless, not all smart drugs yield inherent danger with their use.

Accessibility is another issue associated with safety. Since a drug like Adderall (methylphenidate) is available only through prescription, people may try to get it illegally, even over the internet and from other countries. Dr. Covey asserts, "There are no guarantees that these drugs are real, not contaminated with other more dangerous substances, and therefore even fatal" (Personal Interview 2017). Healthy college students without ADHD diagnoses are typically aware of the cognitive

enhancing effects of smart drugs and their wide abuse across college campuses shows students have little concern for safety as discussed below. Specifically, they abuse these drugs to gain a competitive advantage in their school work. Clinical psychologist, Marcus Hotaling, PhD, says, "I had a student tell me the other week, after not doing well on a paper, that she was frustrated by her peers that had an ADD/ADHD diagnosis and can get ... help from ... medication … she knew she would be able to just pop a pill and do better herself if she wanted to" (Personal Interview 2017). This student is likely to find the desired smart drug via her college campus black market or on the web. While we must take into account that this is anecdotal evidence, in principle, students who meet the criteria set for specific diagnoses should be administered a prescription for smart drugs.

This phenomenon of abuse is reflected in a national survey from 2005, conducted by Sean Esteban McCabe that aimed to calculate the prevalence of nonmedical use of prescription stimulants among United States college students. A representative sample of about 11,000 students across 119 four year undergraduate institutions revealed that seven percent of students used psychostimulant chemicals to increase their work production, and on some campuses, up to twenty-five percent used within the past year (McCabe et al. 2005, 96). While psychostimulant use is primarily used for people diagnosed with attention deficit disorder and ADHD, their wide abuse on college campuses reflects a non-medical desire. As new drugs that aim to enhance cognitive functions such as attention and memory, primarily for healthy individuals, grow into a multibillion dollar market, an obvious concern is one of safety considering they are widely abused outside of their medicinal purposes.

Similar in profile to traditional stimulants, modafinil (with one common trade name being Provigil) is a more recent, popular, and safer smart drug option for healthy populations. Modafinil is used to treat disorders such as narcolepsy, shift work sleep disorder, and excessive daytime sleepiness and it has been shown to treat other conditions (without FDA approval) such as ADHD, Schizophrenia, cocaine addiction, and multiple sclerosis. Similar to other psychostimulants such as methylphenidate, modafinil's clinical case is promising for helping patients with mental disorders and neurological conditions. Moreover, it promotes improved memory and accuracy of decision making and responses for healthy individuals, too. In a study by Turner et al., sixty healthy young adult male volunteers received either a single oral dose of 100 mg or 200 mg of modafinil, or a placebo before

performing a variety of tasks designed to test attention and memory. Results revealed a specific pattern of cognitive enhancement, improving performance on tests of visual and spatial planning and slowing response times on gambling tasks (Turner et al. 2003, 266). Modafinil's effect of increased response inhibition is partly why it is an effective treatment for the impulsive symptoms associated with ADHD. Nonetheless, the essence of this study aimed to test its effects for healthy individuals and results demonstrated that it improves their performance on neuropsychological-related tasks. While altering brain functioning, modafinil has not been shown to produce the same side effects and addictive behaviors like methylphenidate and other psychostimulants. Dr. Hotaling asserts, "I have personally worked with too many students who have had issues with Adderall and similar stimulant based medications. Even with a prescription, sometimes the medication is abused/used incorrectly which can lead to a drug induced psychosis. So, modafinil is certainly, at this point a better alternative than Adderall" (Personal Interview 2017).

SAFE SMART DRUG USE SERVES CERTAIN CONTEXTS

Once we understand the risk of bodily harm and unintended side effects posed by smart drugs, we can discuss the ethics of their application. Modafinil's wakefulness promoting properties have led to its approval in jobs that routinely challenge one's bodily rhythms associated with arousal and timing. One instance is in the military such as Air Force personnel who are required to have top cognitive function and vigilance while fatigued. In the medical world, some experts say any form of stimulant use by physicians delivering patient care is unethical. However, studies show that "physicians engaged in patient care during episodes of sleep deprivation tend to make more errors and perform procedures more slowly" and that "patient care may be compromised" (Westcott 2005, 333). Specifically, one study analyzed the effects of sleep loss and fatigue on residents' performance on cognitive and neuropsychological tests and patient tasks. The results showed two concerning trends: 1. Tasks that dependent on high levels of vigilance and sustained attention were more vulnerable to the effects of short-term sleep loss and 2. Efficiency of task performance was often sacrificed in favor of preserving accuracy (Owens 2001, 414). In the best interest of the patient, it seems modafinil use by doctors performing long surgeries may prove to be an effective alternative to caffeine, which can cause anxiety and affect the psychomotor system. When

we are talking about smart drug use by people who need to stay hyperfocused - military, potentially physicians in surgery, there is an ethical argument to prescribe and take the medication during these time-limited periods.

A discussion about modafinil's approval in the military and potential benefit among health care providers raises the possibility of use by other healthy populations who may benefit from its cognitive enhancing effects, such as in the everyday workplace. Twenty-four year old healthy male and entrepreneur Jesse Grushack takes 200 mg of modafinil orally once a day in the morning. Compared to Adderall, which often disrupted his sleep cycles, appetite, and left him moody, modafinil achieved the same effect for him without the harsh side effects. He asserted, "Jet lag is a non issue and working 80 hours a week has become pretty standard and not unmanageable" (Personal Interview 2017). Finding himself under constant pressure to deliver at a new job, Grushack attributes much of his success to modafinil, which improves his wakefulness. The experience of Jesse Grushack is not a comment about the 'goodness' or badness' of using modafinil, but rather, it points to the appeal of cognitive enhancement in a modern workplace that demands long hours, an intense work ethic, creativity, and travel. These exhausting conditions fuel what thought leaders call 'the power through culture', marked by increased productivity in less time. An article in TechCrunch labeled modafinil as the Silicon Valley entrepreneur's drug of choice (Cederström 2017). A demand for cognitive enhancement exists in the workplace, especially among those who are trying to build companies.

CHALLENGES TO DISTRIBUTION: CE TECHNOLOGIES ARE NOT FAIRLY ACCESSIBLE EARLY ON

An interrelated issue of smart drug implementation is their availability to people of different socioeconomic classes; however, such an attitude limits human ingenuity. Yes, not everyone will be able to improve their functioning with smart drugs, but not everyone can afford a Dunkin Donuts coffee, pay to have their children tutored after school, or hire acclaimed athletic trainers either. In fact, distribution will likely be unfair based on current evidence that shows college students, a privileged middle class segment of the population, tend to be the largest abusers of cognitive enhancers. Low socioeconomic status among other social barriers already exist in many facets of our lives. When humans develop advanced technologies, exposure is limited to those who can afford them first

before they later become widely available for the masses. For instance, the first computer built in 1946 cost about $500,000, the equivalent of six million dollars today, weighing over twenty-five tons and taking up the space of a sizable room. Today, one out of every three people in the world owns a smartphone - and it fits in their pocket. The argument for distributive fairness does not ground obstructing the progress of smart drug development.

FURTHER ASSESSMENTS OF SMART DRUG USE CASES

Another layer in addressing the ethics of smart drugs is their competitive fairness, which will depend on the context. The wide use of smart drugs will require institutions and organizations to review their values and determine smart drug permissibility. For example, in the modern workplace, several ethical challenges surface: 1. Does employee smart drug use provide an unfair advantage over his colleagues? 2. Will employers encourage use among employees and favor job candidates who use? 3. Should we be concerned that smart drug use may further fuel today's rigorous work routine? Such questions are important to consider, but once again, do not pose enough of a threat for banning smart drug use in the workplace when we appreciate the reward of their cognitive enhancement.

Whether in the space of sports or education, different concerns arise depending on the context of the smart drug implementation. For example, athleticism involves an admiration of the natural human body. In professional sports, cognitive enhancers may be deemed the equivalent of a machine powered throwing machine. With this claim, we would expect smart drugs to be prohibited because they are seen as diminishing an athlete's accomplishment or self-worth. This same logic explains why anabolic steroids are prohibited. Conversely, cognitive enhancers might be accepted in schools because they facilitate human learning and improvement through their increased learning acquisition abilities. Then again, Dr. Alexander Covey poses the question, "Is it fair for students of similar aptitude to compete on an exam if one student has access to a drug which could potentially enhance his performance?" (Personal Interview 2017). His judgment is that the playing field is no longer equal. In any case, a reasonable implication of increased smart drug use is their legitimacy and permissibility by different establishments.

CONCLUSIONS

We are prepared right now to define appropriate use of cognitive enhancers for fully developed adults. We know research undoubtedly supports that smart drugs enhance a human's psychological capabilities and that some seem to have a safer profile than others. The most critical issue in discussing the ethics of smart drug use is one of safety. As the public consumes new smart drug supplements, we must closely monitor possible side effects and conduct comprehensive research so we can make informed decisions about their regulation and dosages. Subsequently, we may address different contexts in which smart drugs should be implemented; we anticipate an immense effect on family life and all layers of society. Both military and healthcare related applications make strong cases for smart drug use. They help us realize the value of smart drugs in other contexts such as in the workplace and in education, but this does not come without reservations about fairness among other implications.

The use of smart drugs becoming part of mainstream pharmacology requires as shift in western medicine from focusing on drug implementation after disease onset and neglecting advances for healthy people to solutions that prevent and improve the human species. Rather than allow these ethical concerns to impede progress, we must evaluate how smart drug use manifests itself in different facets of life and society and adapt in time. This requires accepting the inherent risk that comes with all novel practices. With increased use of cognitive enhancement among healthy populations, this is the approach we must have in addressing the smart drug revolution and movement.

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Emotional Synthesis and Moral Sociality

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ABSTRACT
The question of the nature of emotions has been a hotly debated topic since the Greeks, and its role, or lack of a role as some might put it, in our moral lives has been recognized throughout the history of ideas. From Aristotle to Hume, from William James to Alison Jaggar, and everyone in between, the desire to understand our emotions and how they affect our lives, and how they should affect our lives, remains a necessary part in our quest for not only ethics, but the nature of knowledge, social life, and consciousness. I will discuss these four areas in this paper, beginning with a look back at modern and contemporary theories of emotion, pulling especially from Alison Jaggar, then moving into my main argument about the nature of emotions as a synthesis of value-built passive attitudes and active judgments in the form of emotional experience, discussing the nature of objects of emotions, especially regarding other people, using Sara Ahmed's concept of the "Other" to explicate my own position. Afterwards, I'll be describing the important moral problem in human relationality of idealization, or the process by which an agent creates and lives by their idea of someone or something instead of what that person or thing is, and offer an approach to it using this definition of emotions as synthetic experience, so as to both better avoid and fight against the problem of idealization, especially through the potential of Ami Harbin's concept of "disorientations" and Ahmed's discussion of fear.

KEYWORDS
Emotions, Fear, Idealization, Positivism, Cognivitism, Social Constructionism, Attitudes, Judgments, Observations, Death

INTRODUCTION: POSITIVISM, COGNITIVISM, AND SOCIAL CONSTRUCTIVISM

When looking at the contemporary history of ideas regarding theories of emotions, there are generally three different schools of thought: Positivism, sometimes called the "Dumb View" by critics, expounded on by William James and, to a lesser degree, John Dewey in the late nineteenth century, holding that emotions are essentially the same as feelings, bodily disruptions of normal rational activities like making judgments and observations. Feelings are never "about" something for positivism, but are simply a kind of physiological accident completely separate from any cognitive functions. The problems with this, as identified by cognitivist thinkers coming afterward among others, are multiple. For our purposes here, we'll discuss the main one related to the transition to the cognitivist approach, which is, as Alison Jaggar puts it in her paper "Love and Knowledge", "emotions differ from feelings, sensations or physiological responses in that they are dispositional rather than episodic" (Jaggar 1989, 155). This is where "emotions as judgments/intentional" comes into play, trying to explain the affective nature of them without relying on calling them passive accidents.

A famous example of the cognitivists, Robert C. Solomon, known as the premier Sartre scholar of the late twentieth century, wrote in his book entitled "The Passions" that "the expressions of emotion are not independent of emotion but built into the system of judgments that constitute the emotion... the context of an emotion is not just a cognitive context, but an active context in which we are engaged in a world that we care about" (Solomon 1988, 188). In a very existentialist manner, specifically on the importance of freedom and choices, Solomon and the cognitivists approach emotions from the opposite side of the positivists, insisting that our emotions are choices and judgments we make about each other and the world around us. Alison Jaggar, in her account of this transitional history, says about the cognitivists:

> These newer conceptions emphasize that intentional judgments, as well as physiological disturbances, are integral elements in emotion. They define or identify emotions not by the quality that may be associated with them, but rather by their intentional aspect, the associated judgment. Thus, it is the content of my associated thought or judgment that determines whether my physical agitation and restlessness are defined as "anxiety about

> my daughter's lateness' rather than as 'anticipation of tonight's performance". (Jaggar 1989, 155)

However, she argues that cognitivists, even with their recognition of intentionality as a necessary aspect of emotions, still proliferate the same problems as the positivists, namely the distinction between what some philosophers of emotion call "attitudes" and the mind (judgments), perhaps tending towards a solipsistic approach of emotions in a Neo-Cartesian dualistic way just as the positivist completely separated rationality and emotions (as feelings).

This is where Jaggar, as well as most of the other authors we'll be looking at in this paper, split from the cognitivists and transition towards social constructivism. Their approach, though differing in a number of ways between authors, looks especially at the importance, even necessity, of the social world in our emotional lives. Some of them take a very different approach to existentialism from Solomon and focus more on the points Sartre, Beauvoir, and others make on the "Other"; others delve more into the social aspects of fear, anxiety, disorientation, and their effects on constructed values in the form of historical associations and stereotypes. Key to both of these types of approaches to constructivism is the concept of values and their relationship to our emotions and thus our moral agency; this, and its ties to both "emotions as judgments" from the cognitivists and "emotions as attitudes" from Dewey and Greenspan, is what I want to deal with in this paper: That, instead of one side of a separation or dualism of attitudes and judgments, emotions are value-constructed syntheses of passive attitudes and active judgments in experience about a particular object, necessarily a part of our observations and lived-experiences, and that this can both create and fight against the moral problem of idealization.

PART ONE: EMOTIONS AS SYNTHESES IN EXPERIENCE

I. Value Construction and Sociality

Whether one thinks of people as individuals, what Sartre calls "being-for-itself", or not, the fact that everyone is part of a society in some form is apparent, that we are in relationships with each other, and that these relationships at least govern, if not determine, who we are. These relationships all have structures to them, often in the form of social norms and rules about the appropriateness of

certain actions, and these in turn affect our emotional experiences. Margaret Walker writes in "Ineluctable Feelings and Moral Recognition" that "I think it is dangerous not to notice that all human societies elaborately construct patterns of relationships and specific norms for them" (M. Walker 1998, 76-7); the danger here lies in the ignorance of values as being inherited in our social experiences and their effects on our attitudes and judgments. Many previous thinkers have, I think, often confused values for instincts in saying that some values are inherent to human nature, though our instincts have certainly influenced our value construction throughout history. Values, as socially constructed, are a necessary part of lived-experience as continually morphing lenses through which we exist in the world, characterizing our relations to ourselves, others, and our surroundings, both in our appropriate perceptions of these and in stereotypes and misunderstandings. A prime example of this that I will use throughout this paper is fear, which, though it can be justified in a dangerous situation, is often a response on the part of the fearer to the values influencing our relation to another, and, as Sara Ahmed puts it, "the relation between objects that are feared is shaped by histories that 'stick', making some objects more than others seem fearsome" (Ahmed 2004, 67). Fear becomes a discoloring of the value-lens, painting both the fearer and the "fearsome" object in these strict roles through the misapplication of a given value or the application of an unfounded, unjust value in cases of racism, sexism, and other forms of oppression. This also is the case for many other emotional experiences: hatred, anger, resentment, love, joy, confusion, discomfort, etc. Another example, one that is key to understanding how values relate to our ideas about and relationships to ourselves, is the topic of Ami Harbin's "Bodily Disorientation and Moral Change", about the experience of bodily disorientations and how they relate to and can change our moral agency. Harbin describes bodily disorientations as

> …experiences of shock or surprise, unease, and discomfort. They are often cued by feelings of being out of place, unfamiliar, or not at home. When everyday practices of embodiment are disrupted, we can come to feel disoriented, almost always in ways that make us unsure of how to go on. (Harbin 2012, 2)

As she notes, the confusion becomes born out of a misapplication and/or breaking-down of the value structure we've held up until the moment of disorientation.

This, I argue, is a possible, and very probable, effect of our passive attitudes being changed through the deconstruction of one or multiple values, requiring our attitudes to shift to fit the new situation, thus changing our agency and judgments and allowing our values themselves to reconstruct according to these shifts. This relationship between our attitudes and values creates a sort of feedback loop, just as later we'll see happens between our attitudes and judgments in their synthesis in experience, and Jaggar notes this first loop and its effects on our judgments and their objects:

> Values presuppose emotions to the extent that emotions provide the experiential basis for values... And just as values presuppose emotions, so emotions presuppose values. The object of an emotion - that is, the object of fear, grief, pride, and so on - is a complex state of affairs that is appraised or evaluated by the individual. (Jaggar 1989, 159)

The moral problem with this is, again, that these evaluations are often unfair/unjust in the misapplication of our values and emotions. Our emotions and values' connection begins to apply themselves in, as Ahmed put it, a "sticky" way to their object through the repeated practice of evaluation in ignorance of their injustice. Ahmed, writing about the history of this in racism and the fear inherent to it, writes

> … the sideways movement between objects, which works to stick objects together as signs of threat, is shaped by multiple histories. The movement between signs does not have its origin in the psyche, but is a trace of how such histories remain alive in the present... The movement of fear between signs is what allows the objects of fears to be generated in the present (the Negro is an animal, bad, mean, ugly). The movement between signs is what allows others to be attributed with emotional value, as "being fearsome". (Ahmed 2004, 66-7)

II. Interests and the Apparent Conflict in Emotions

This first feedback loop, and the second as well, is also, I argue, what creates interest between individuals, or our interest in things in general, both material and abstract. When someone matters to us, that importance has been crafted

through a period, whether long or short, of connecting our values and emotional experiences with that person in shared events, often requiring a reconstruction of our value histories to fit with that person and thus influencing our emotional experience of that person, whether it's happiness, contentment, anger, fear, or shame. Shame is a particularly interesting relation, with Sartre talking about its necessity as the main way of experiencing the "Other", and Lisa Guenther, in her critique of Sartre, discusses Levinas' shame as a form of ethical interest, saying "The other side of shame is interest; we feel shame because others matter to us in ways that are constitutive of who we are" (Guenther 2011, 24); the object of our values and emotions is always something that connects to those values and emotions in particular ways, even if that connection is a completely opposing structure, which is often the case with Harbin's bodily disorientations:

> As disoriented, we can feel and act lost, we don't know how to interact appropriately with our surrounding environments or with others around us. As disoriented, we tend not to know our proper objects of action and attention: what actions we should aim to complete, who or what we should interact with in the world, what stands to help or harm us. (Harbin 2012, 6)

Defining interest as this connection between the feedback loop of our values and emotions and the object of our sociality is what allows for the synthesis of the two emotional experiences to be synthesized as "experience"; to clarify, I mean experience as a kind of sociality viz. social experience, not the totality of our being (though some philosophers do argue that sociality is the totality of our being). This inherent sociality of emotions is why social constructivism is so necessary to understanding our emotional experiences, since, as stated above, we learn and inherit our values from others, and thus learn and inherit our emotional capacities from others. Jaggar, when talking about the appropriateness of emotions as being socially constructed, writes:

> The most obvious way in which emotions are socially constructed is that children are taught deliberately what their culture defines as appropriate responses to certain situations: to fear strangers, to enjoy spicy food or to like swimming in cold water. On a less conscious level, children also learn what their culture defines as

> the appropriate ways to express the emotions that it recognizes. (Jaggar 1989, 157)

As our historical associations increase, our interests are able to develop both consciously and unconsciously, developing our emotional experiences in their attitudes and judgments. Our passive attitudes are in particular important to recognize for the power they have on our judgments specifically because of their being unconscious, and therefore often unseen and unresponded to. Philosophers such as Patricia Greenspan arguing still for the distinct separation of passive affects and judgments (Greenspan calls them both attitudes of a kind (Greenspan 1980, 237)) claim that such passive affects are still "irrational" in the sense that they take away control from our judgmental capacities, Greenspan arguing that "... there may be a sense in which emotions are intrinsically irrational. Though we have some rational control over them, our control is limited; they are based on reaction to particular facts as they come into consciousness, rather than consideration of all the relevant reasons", but I would rather suggest that, while the affective attitudes can certainly influence our judgments, this isn't an inherent "irrationality", as "reactions to particular facts" are still a form of interpretative experience (Greenspan 1980, 237); the spontaneity of the interpretation does not inherently detract from its capacity to add value (in the qualitative sense) to our judgments, which I argue they often do by providing insight into the momentary social relations passing by, giving judgments a much wider range of possible paths, which Greenspan does argue for to a degree:

> There may still be enough similarity between the two to allow for their comparison on cognitive criteria, in relation to a total body of evidence. I have admitted as much... by characterizing them as attitudes directed towards an object, with appropriateness taken as the value of emotions which comes closest to truth for judgments. (Greenspan 1980, 239)

Walker does so as well by claiming that "resentment, gratitude, love, forgiveness, and, I would add, trust and mistrust are among 'personal' reactive feelings and attitudes to expressions of others' wills" (Walker 1998, 62). However, this still maintains a dualistic stance regarding the two as distinct and separate, whereas I argue here that the two are too tied together to have any efficacy or even proper existence apart from each other. The reason for this is that our attitudes create

another feedback loop with our judgments, both fueling each other and shifting each other to fit social situations in the world, which Jaggar also claims:

> Emotions, then, are wrongly seen as necessarily passive or involuntary responses to the world. Rather, they are ways in which we engage actively and even construct the world. They have both 'mental' and 'physical' aspects, each of which conditions the other; in some respects, they are chosen but in others they are involuntary. (Jaggar 1989, 159)

Cognitivism fails to determine where our interests lie and how we experience them as tied to our agency, as Jaggar explains: "When intentionality us viewed as intellectual cognition and moved to the center of the picture of our emotion, the affective elements are pushed to the periphery and become shadowy conceptual danglers whose relevance to emotion is obscure or even negligible" (Jaggar 1989, 156).

III. Objects of Emotions

We'll get back to the implications brought up by this theory of synthesis in the next section; for now, I'd like to focus on often missed aspect of emotions that is necessary to both our attitudes and judgments, as well as to their synthesis: the particular object they are aimed at. The objects of our emotions are often passing by, (though memory serves to keep the fading idea of them in us), but just as emotions necessarily require socially structured concepts to be built around (Jaggar 1989, 157), they also require objects of experience, examples being loving the beloved, fearing the bear, hating the racist, enjoying the burger, etc.; there is always an "about" or a "desire", as Solomon writes (Solomon 1988, 189-190), that characterizes them. Fear is once again a particularly useful example in its ability to make concrete the object while it passes by or hasn't even passed by yet, and, more importantly, by its capacity to misapply values and historical associations. Sara Ahmed, writing using an example from an essay by Fanon, asks

What makes us frightened? Who gets afraid of whom?... It is not simply a question of some body being afraid of some body who passes by. On the contrary, the object of fear is over-determined... The fear announces itself through an ontological statement, a statement a self makes of itself and to itself – "I'm frightened". (Ahmed 2004, 62)

The object of our fear, and all our other emotions, becomes, in a Hegelian sense, the bearer of our consciousness, in that our social existence becomes dependent on the object to bear that emotion with us. This dependency, while a common case in social experiences, can very easily become a problem by creating a misapplication of values that needs to be restructured, often in the form of disorientations, such as anxiety. However, anxiety, Ahmed argues, is different from fear in that it can potentially remain in the present because it latches onto objects instead of moving towards an anticipated future, that "anxiety becomes an approach to objects rather than, as with fear, being produced by an object's approach. This slide between fear and anxiety is affected by the passing by of the object", that fear "involves an anticipation of hurt or injury. Fear projects us from the present into the future... So, the object that we fear is not simply before us, or in front of us, but impresses upon us in the present, as an anticipated pain in the future" (Ahmed 2004, 65-6). The problem with both of these is that they can create an unreal expectation of their objects, and other emotions fall into this same misapplication of judgment-making by our introducing unjustified fear and anxiety. There is, of course, justified fear (justified anxiety doesn't seem very plausible), but such justification is generally seen right as the object begins to pass by, not when it's far out of view. Fear thus transforms us into a being of fear, while also transforming the object of our fear into a being of fearsomeness; respectively, anxiety transforms us into a being of anxiety and everything else into objects of threat. This is the same for all emotions: in loving someone, we each become the lover while that someone becomes the beloved; in hating someone, we become the hateful while they become the hated; in enjoying something, we become the joyful while that something becomes that which is enjoyable. What this leads to is the feedback loop between our attitudes and our judgments that thus influences our observations about a particular object.

PART TWO: OBSERVATIONS, SOCIALITY, AND IDEALIZATION

IV. Passions in Perceptions

Positivism, as the "heir" of the scientific revolution, brought with it a notion that has poisoned all logical thinking and experimenting: That reasoning is only valid when it is devoid of emotions, often called "the myth of dispassionate

investigation" by critics (Jaggar 1989, 161). Jaggar argues about this exact problem in her paper, saying:

> The validity of logical inferences was thought independent of human attitudes and preferences... Because values and emotions had been defined as variable and idiosyncratic, positivism stipulated that trustworthy knowledge could be established only by methods that neutralized the values of individual scientists. (Jaggar 1989, 152)

This grand mistake has created the illusion that our observations about anything other than our emotions themselves, and even them sometimes in the sciences, should not be informed by our emotional experiences, even while our observations inform our emotional experiences, as Jaggar writes:

> Just as observation directs, shapes, and partially defines observation. Observation is not simply a passive process of absorbing impressions or recording stimuli; instead, it is an activity of selection and interpretation. What is selected and how it is interpreted are influenced by emotional attitudes... Illustrating how the individual experience of emotion focuses our attention selectively, directing, shaping, and even partially defining our observations, just as our observations direct, shape, and partially define our emotions. (Jaggar 1989 160)

I suggest here, however, that emotions, as a synthesis of attitudes and judgments, are themselves our observations, that the emotional experiences we see as accompanying our observations about objects are in fact the observations themselves, or rather that the observations are the judgment part of the synthesis. We often call this the inescapable bias, which Jaggar notes:

> We have seen already that distinctively human emotions are not simple instinctive responses to situations or events; instead, they depend essentially on the ways that we perceive those situations and events, as well on the ways that we have learned or decided to respond to them. Without characteristically human

> perceptions of and engagements in the world, there would be no characteristically human emotions. (Jaggar 1989, 160)

The importance of this is the very strange implication of this feedback loop: that knowledge, at least in the experiential knowledge in our relationships to each other, the world, and things in general, becomes a necessarily social experience that is constructed by our emotional experience, in turn constructing a greater sociality and emotional existence. The possibility of this to mature our moral agency is apparent:

> I take moral agency to be largely about day-to-day practices of interaction: with spaces, objects, living beings, events, projects, ideas, and norms. As Walker and Weiss partly indicate, we engage in such interaction through overlapping embodiments of attention, intention, communication, and care. (Harbin 2012, 3)

Moral maturity begins to develop through a recognition of the feedback loop by allowing for a wider range of actions in response to it and to problems often arriving through its misapplication: "I also argue that disorientations can allow for changed action not exclusively because of attention, reflection and changed understanding, but also through shifts in pre-reflective experience and especially through disruptions in habitual practices of relating to others" (Harbin 2012, 5-6). As Harbin notes, this change in our observational capacities requires a change in our approach to the "Other", just as Guenther writes:

> Reason is not longer to be found in a faculty of the individual subject, but in the practice of giving reasons to an other who puts me in question; knowledge is no longer the essential correlation of consciousness to a world, but the offering of a world that was hitherto mine to an Other who commands me to generalize my singular experience, to put my sensible affects in common by using concepts. (Guenther 2011, 31)

V. Sociality and the Other

The "Other" is both an anthropological/philosophical mystery and a concept of common understanding. It is a common understanding because we all

experience the "Other", and it's a mystery because our experience of the Other seems contradictory to our being social creatures, as Guenther puts it when critiquing Sartre's idea of "being-for-itself": "As one who is born to another, I am always already in relation to Others, even before I become aware of myself as a separate subject. There was never a time when I actually existed as a pure for-itself, untouched by the complicated burden of being-for-Others" (Guenther 2011, 27). The disparity between these two apparent facts of social experience and its roots become clearer, however, when we look at the movement Guenther and Jaggar describe between the two, with Guenther noting the importance of shame in relationships:

> In shame, I am expelled from the paradise of a purely subjective freedom. While my own freedom does not disappear, it is now encumbered by the existence of others who challenge my freedom with their own... The lesson which the Other teaches me is shame... that I have an outside that is vulnerable and exposed, a body that exceeds my own conscious experience. (Guenther 2011, 26-7)

Jaggar goes further to say:

> There is a sense in which any individual's guilt or anger, joy or triumph, presupposed the existence of a social group capable of feeling guilt, anger, joy, or triumph. This is not to say that group emotions historically precede or are logically prior to the emotions of individuals; it is to say that individual experience is simultaneously social experience. (Jaggar 1989, 158)

This adds to Guenther's claim, that the presence of the Other forces me through shame into sociality, that sociality in fact is one and the same with individual experience. The "Other", in its transition from not existing at all to existing distinctly in relation to a "being-for-itself" to causing that "being-for-itself" to exist "for-Others", moves even further to become the individual's experience itself, thus beginning to resolve the conflict. This can, of course, be recognized in Hegel, Nietzsche, and Heidegger's works as the process towards individuation from sociality while maintaining such. As a conflict to be resolved, especially in individualistic cultures like much, if not all, of the West, the values we hold will

most likely be frustrated by our attempts to do so, but these frustrations can provide an even greater force of motivation for our attempts:

> I argue that they (disorientations), can strengthen relationality, heighten sensitivity to vulnerability, draw attention to dynamic experience, and spur political prioritizing... Given that moral agency is partly enacted through the ways we interact with and depend on other people, corporeal disorientations can strengthen moral agency by altering how we act and rely on others within relational frameworks. Disorientations help us better recognize relationality when they highlight how all possibilities for action are constituted through complex relationships with others. (Harbin 2012, 11-12)

At the very least, the opportunity presents itself when we're confronted with the conflict, more so when it confronts us clearly and aggressively. However, the conflict also presents the opportunity to retreat back to seeing the "Other" as someone separate.

VI. The Problem of Idealization

When the "Other" is discussed in philosophy and anthropology, it's often focused on the fear associated with them. As discussed above, genuine fears are, I argue, possible when fearsomeness becomes apparent in the moment of its passing by, not in anticipation of the future. However genuine a fear is, though, we have noted that fear, along with other emotions, pulls the "Other" into a relationship just by our having the emotional experience, giving attributes to them that they may or may not have, and this is especially clear in fear:

> Fear envelops the bodies that feel it, as well as constructs such bodies as enveloped, as contained by it, as if it comes from outside and moves inward. And yet fear does not bring the bodies together, as a form of shared or fellow feeling. While signs of affect seem to pass between the bodies (the shivering of the Negro becomes the trembling of the white little boy), what passes is not the same affect, and it depends on the (mis)reading of the other's feelings. In other words, the other is only felt to be

> fearsome through a misreading, a misreading that is returned by the other through its response of fear, as a fear of the white child's fear. (Ahmed 2004, 63)

I argue here that, as stated before, fear can begin to envelop and distort our other emotions as it envelops us and the "Other", thus distorting our entire sociality. To clarify, the fear recognized here is what I see as the most basic fear, the fear that produces and is also proliferated by radical individualism, the source of the disparity with the "Other": the fear of death, or rather, the fear of non-existence. This comes in two forms: first, of course, is the literal fear of death, a negation of one's own existence (though obviously, this becomes a topic for theology, where we won't go in this paper); second, and much more valuable to the problem of idealization, is one's experience of death in the apparent loss or passing by of the objects of our emotional experiences, especially the people we interact with and are interested in. This is visible most often in familial and romantic relationships, with the death of a beloved family member or the breaking up of a relationship becoming experiences of death for us by the loss of the developed sociality with an "Other", but it can be seen even in the simplest of everyday practices and tasks: "Not knowing how to respond to someone can be disorienting, as in awkward conversations (Capello 2007, 53); when we find ourselves called to respond to conflicting needs or requests, like when we are inclined to laugh at a racist joke (Maclaren 2009, 39-41); after the excitement of a first kiss" (Harbin 2012, 6). In short, as Guenther pointed out, the possibility of death shows its face whenever we become vulnerable in any way by the continual presence of the "Other" at different levels of intensity, as well as different kinds of presence. Our vulnerability and our emotional experience of it will be different if it's with a romantic partner than if it's with a sexist or racist, though both kinds "position us as other" (Harbin 2012, 8); this sense of "otherness" directed at us only adds to the fear of death, as it puts us in a worse position than before by increasing the possibility of death in substantial loss - a loss of selfhood in the present while already expecting a total negation of self.

This fear reaction, in general, is the process and cycle of idealizing that this base fear of death produces: a retreat into the self to fend off the "Other"'s intrusion into our otherwise stable emotional experiences and sociality, a retreat that pushes the "Other" back into that role instead of opening up to moral maturity in expanded sociality, and further envelops both yourself and the "Other" as

struggling "Others", thus foreclosing any kind of further sociality. Guenther puts it well when she says:

> To reduce someone to their ethnicity, race, or religion - even if this aspect of their identity means something important to that person - is to chain them to their identity in a way that forecloses any future that could be otherwise, a future in which this or that aspect of one's identity might have a somewhat different meaning. (Guenther 2011, 30)

Ahmed also argues that though this is for the purposes of security, it ultimately ends up backfiring: "Stereotypes seek to fix the meaning of the other, but the very repetition that is required to enable such a fixation renders them a side of insecurity rather than security" (Ahmed 2004, 64). Idealization thus becomes the death of the self without the self realizing its own demise.

And yet, even the fear and experience of death in loss can become, if we allow it, the ultimate force of motivation for maturing our moral agency. Or rather, our experience of loss can become the kind of disorientation necessary to spur emotional change, to resolve the conflict between "being-for-itself" and "being-for-Others" in their transition, and to allow for emotional maturity in our sociality by opening the door for recognition of the "Other" in our experience. Greenspan and Harbin both explore at the end of their papers how this can lead to proper moral agency, Greenspan focusing on mutual identification: "Genuine emotional identification with others, then, motivates spontaneous sympathetic behavior, behavior that express our concern for others' interests for their own sake. I think it should be obvious that such behavior facilitates social relations" (Greenspan 1980, 240-1), and Harbin noting the effect the disorientations can bring of a greater reflectivity on the values structuring the experience and the other emotions tied to it: "Being disoriented in body can mean that what is appropriate to say, who is appropriate to touch, how it is appropriate to look and move, and what kinds of emotions are appropriate to express become more open questions - the social norms that govern them are made questionable" (Harbin 2012, 16). The possibility of this transition and resolution is particular, I argue, to the experience of death as loss, and a response to it, often born out of desperation, of reflection on the values we hold, the attitudes we have, and the judgments we make as a synthesis

of emotional experience, and thus on the nature and maturity of our sociality and moral agency.

VII. Conclusion

I have tried in this paper to provide an account of both emotions as a synthesis that becomes emotional experience in general, as well as a major moral problem connected to all the different parts of that synthesis and to the sociality brought out of emotional experience, and yet as theories of emotion continue to develop its own problems become apparent: Is it mixing two aspects of human experience that can't be mixed? What about emotions that we're completely unaware of in a psychoanalytic sense? However, the account I suggest here is intended most as a defense against the problems that dualistic views bring with them that proliferate the problem of idealization by creating a disparity between a supposed private self of cognition and public, social self of emotional experiences; the two aspects of attitudes and judgments are combined in this approach to show the clear feedback loop the two have on each other that can only be produced by the values inherited in our natural and never-ending sociality to fight against the problem of idealization and its distortion of our emotional experience and human experience in general. Though our fear of death may never completely reverse into an acceptance and negation of "Other"-ness, I think it's at least a good starting point, and, as Ahmed puts it perfectly: "If it is fright that 'brings one to life', then it does so only by announcing the possibility of death" (Ahmed 2004, 68).

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compos mentis

In the Absence of a Future Like Ours

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ABSTRACT
When is infant euthanasia permissible? Consider the case of a child born with a rare but severely painful and debilitating disorder, a disorder that is not treatable. The only course of action that a physician could undertake to abate the associated pain that the child suffers is to prescribe painkillers for the child's use. There is no prospect that the child will improve in health and there exist no emerging technologies which could have questionable importance in treating the child. Many among us shudder at the thought of giving birth to a child with such a disorder and find it unimaginable to be that very child. Some may even go as far as to say that this child's life may be ended, but for many others this is prima facie unethical because it involves killing. The central question of my paper is whether it is morally permissible to end the life of a hopelessly suffering child. I will argue that it is permissible to end this child's life provided: (i) that the child is in regular extreme pain and suffering, (ii) that there is no present or prospectively viable course of action that will improve the child's condition, and (iii) that there is no potential for the child to live a recognizably human life or, in other words, to have a future like ours. In my paper I draw on a real case similar to the one sketched above, the case of Bente Hindriks. I identify and address the ethical conflicts in this case, as well as motivate and explain qualifications (i)-(iii) given above. Qualification (i), in regarding the suffering that such an infant is in, motivates utilitarian considerations. However, my position isn't ultimately fully utilitarian. Qualification (ii) displays the problem that a lack of effective treatment poses. Lastly, qualification (iii) appeals to the significance of what we would consider to be a life worth living, an argument inspired by Don Marquis. Toward the conclusion of my paper I consider possible objections to my position and responses to such objections, and provide a commentary on some central features of my position and their consequences. The ultimate goal of this paper is twofold: 1) to defend the thesis above, which is to provide an account for why infant euthanasia is permissible in some cases, and 2) to provide a sketch of the moral status of infants that is grounded in Marquis' concept of a "future of value like ours."

KEYWORDS
Infant, Euthanasia, Infanticide, Escobar, Marquis, Munson, Nesbitt, Future of Value, Future Like Ours, Bente Hindriks, Suffering, Treatment, Utilitarian, Bioethics, Moral Status

A child is born. This child has a rare but severely painful and debilitating disorder, a disorder that is not treatable. The only course of action that a physician could undertake to abate the associated pain that the child suffers is to prescribe painkillers for the child's use, painkillers which cannot completely alleviate the suffering of the child. There is no prospect that the child will improve in health and there exist no emerging technologies which are likely to help in treating the child. Many among us shudder at the thought of giving birth to a child with such a disorder and find it unimaginable to be that very child. Some may even go as far as to say that this child's life may be ended, but for many others this is *prima facie* unethical because it involves killing. The central question of my paper is whether it is morally permissible to end the life of a hopelessly suffering child. I will argue that it is permissible to end this child's life provided:

(i) that the child is in regular extreme pain and suffering

(ii) that there is no present *or* prospectively viable course of action that will improve the child's condition, and

(iii) that there is no potential for the child to live a recognizably human life or, in other words, to have a future like ours.

This paper is divided into five sections: in §1 I provide some groundwork on some significant distinctions that will shape the course of the discussion, in §2 I will present a case similar to the one sketched above, the case of Bente Hindriks, in §3 I will identify and address the ethical conflicts in this case, as well as motivate and explain qualifications (i)-(iii) given above, in §4 I will consider possible objections to my position and responses to such objections, and in §5 I will conclude the discussion with a commentary on some central features of my position and their consequences. The ultimate goal of this paper is twofold: 1) to defend the thesis above, which is to provide an account for why infant euthanasia is permissible in some cases, and 2) to provide a sketch of the moral status of infants that is grounded in the concept of a "future of value like ours."

§1: GROUNDWORK

Throughout the course of this paper, I will be referring to the concept of infant euthanasia, as opposed to the more general infanticide. The reason for

this choice rests in the fact that I will argue that my position only applies to a subset of cases within infant euthanasia, which itself shares significant overlap with infanticide. This distinction is critical to the extent that my argument only applies to this specific subset of infant euthanasia, *not* infant euthanasia generally nor most cases of infanticide. I define both below:

> Def. Infanticide: The *intentional* killing of an infant.[1]
>
> Def. Infant Euthanasia: The *intentional* mercy-killing *or* "letting die" of an infant.

There is a question which naturally follows from the above distinction: can there ever be a case where qualifications (i) and (ii) are satisfied but the killing is not a mercy-killing and, thus, falls outside of the scope of infant euthanasia and into infanticide generally? The answer is "yes," and to explain why there is a need for a clear formulation of what mercy-killing is. A *mercy-killing* is one where the patient's condition is described by both qualifications (i) and (ii), and when the patient is killed *for the reason* of these qualifications. When an infant is in regular pain and suffering, and there is no way to improve the infant's condition or no prospect of doing so, and the agent performs the killing for these reasons, then it is a mercy-killing. Note that this very particular formulation is absolutely crucial to the extent that it rules out killings which may be done for more immoral or, at the very least, non-moral motives. For instance, if a killing is performed simply because the afflicted infant will be a financial burden to its parents, then the killing is *not* a mercy-killing.[2] The very same considerations apply to "letting die." If a parent lets

1. In this paper I will not be further engaging in the debate of what intentionality entails. Here, too, I take a conservative and, for our purposes, sufficient approach: An *intentional killing* is one where the agent performing the killing 1) sets out to kill a being and 2) kills a being.

2. One might object here by claiming that it is impossible in most, if not all, real-world cases to attribute such clear-cut motives. For instance, parents may be both motivated to kill in light of their child's medical condition *and* financial considerations. This objection threatens the applicability of the mercy-killing condition that the child is killed *for the reason* provided by the qualifications. I don't have a means of formally resolving this issue in a systematic way, and I admit the objection's force. But I believe that for our purposes it is sufficient to appeal to primary motives. If, for instance, the parents see that killing will result in less of a financial burden, but are primarily motivated but their child's condition, then I would say this killing is an instance of mercy-killing.

an infant die because of mere neglect, we must consider this as separate from a case in which she lets the infant die for the reasons of its medical circumstances.

Furthermore, note that the question of whether killing is *necessarily* involved in euthanasia is a controversial one. One assumption that I take in this paper is that there may be a relevant moral distinction between active (i.e. "killing") and passive (i.e. "letting die") forms of euthanasia (Nesbitt 1995).[3] That is to say, it is possible that the agent performing euthanasia is not necessarily as morally responsible in the passive case as in the active case for the death of the infant. Some maintain that only passive euthanasia is permissible in certain cases, while others maintain that active euthanasia is preferable to passive euthanasia. On this and related debates I hope to stay as neutral as possible; here I merely mark the distinction as a common one that ought to be recognized in any thorough treatment of this subject. Whether or not an agent is justified in either a mercy-killing or a "letting die" is the very question that will be investigated in the course of the following arguments. The reason why I don't make a firm commitment will become evident in §3.1, where I provide a utilitarian-inspired backing of my position. To put the point briefly, the distinction is relevant for my purposes for the following reason: active euthanasia is *preferable* to passive euthanasia because, in the context I am discussing, it often entails less suffering.[4] Even if a "killing" may turn out to be (*ceteris paribus*) morally worse than a "letting die," the additional amount of suffering that can be alleviated by the killing will typically justify choosing it over a more painful passive euthanasia.

There is one final dimension to be considered. General euthanasia can be classified as either voluntary, involuntary or nonvoluntary. An infant is not able to provide informed consent, and, furthermore, never was able to provide informed consent.[5] For this reason, infant euthanasia is always nonvoluntary. It is not possible

3. While it would be inappropriate to discuss the entire argument against this assumption, James Rachels' "Active and Passive Euthanasia" is an excellent discussion presenting an argument against the distinction. The essay cited, Winston Nesbitt's "Is Killing No Worse Than Letting Die?" is an argument in favor of the distinction, framed largely as a response to Rachels.

4. As a brief and final note on this topic, observe that were a distinction to exist, not all cases of infant euthanasia fall under the infanticide umbrella, at least as I've defined it. This is because infanticide necessitates the active component, killing, and doesn't permit "letting die" in its scope.

5. To see a contrast here, consider a patient who recently entered a Persistent Vegetative State (PVS). This is a patient who was at one point able to give informed consent, and is now not able to

for it to be voluntary or involuntary because both of these categorizations require that the patient be able to provide informed consent, which an infant is not able to do. However, there is also the question of the extent to which the infant's parents or guardians provide informed consent. After all, someone else needs to make the decision of whether to euthanize or not, and that other person in practice will almost never be the physician euthanizing the patient. This is an important debate and one that will be introduced more clearly toward the conclusion of this paper, although I will not engage with it in any length.

My aim in providing these definitions is to provide conservative and simple formulations of the topic at hand. This discussion highlights assumptions that I take and significant distinctions that will be useful in §§3-5.

§2: THE CASE OF BENTE HINDRIKS

Before arguing for the moral permissibility of infant euthanasia in particular circumstances, it would be useful to understand the motivation for presenting this argument. Cases similar to the one I provided above are actual occurrences and not far-fetched thought experiments, and this makes the discussion relate to actual events rather than those merely imagined. The case of Bente Hindriks is an illustration of this fact. In this section I will provide a brief overview of the troubling existence Bente had.

Upon birth, Bente was diagnosed with a genetic disorder called Hallopeau-Siemens syndrome (abbreviated H-S). This disorder is characterized by a genetic defect which "results in the formation of large blisters on the skin's outer layer, and even a light touch can rupture the blisters and make the skin slough off, causing excruciating pain" (Munson and Lague 2016, 515). In addition, feeding can become troublesome because a child with the syndrome can damage the lining of her mouth, necessitating the use of a feeding tube. Blindness can result due to scarring of tissues surrounding the eyes, and webbed hands or feet may result due to complications in healing and regenerating skin. The life expectancy of children with H-S is often three to four years, but in rare cases can go up to around ten, and such children "remain in constant pain throughout their lives, no

give informed consent. It is possible that such a patient could have given informed consent to be euthanized should he enter a PVS and, thus, he could have at one point given informed consent when he was once able to provide it, in spite of the fact that he is no longer capable of providing it. Whether or not such informed consent is permitted is an entirely different ethical discussion.

matter how short or how long" (*ibid.*). Typical causes of death include infection or skin cancer. The longer they live, the more medical intervention is necessary to maintain life. Bente was subject to such interventions, having to be fed through a feeding tube and needing a constant supply of antibiotics administered through an IV to ward off infections caused by the open patches of flesh where her skin had fallen off.

The argument I will put forth in the coming sections will rely on the fact that Bente is in pain, so if the details above happen to be insufficient in convincing the reader that she was in pain, here is further evidence toward that conclusion. She "showed signs of extreme suffering: uncontrollable and unceasing shrieking, abnormally high blood pressure, a rapid pulse, and fast breathing…[all] signs that experienced pediatricians recognize as indicating that a baby's body is under severe stress" (*ibid.*). She routinely screamed, and while her doctor provided her with painkillers they still weren't sufficient to stop her pain. Medical interventions meant to help Bente, such as bandaging the areas where her flesh was revealed, only tore off more skin and revealed more flesh. Bente had all of the physiological necessities to experience pain, which is to say an adequately developed nervous system, brain, and neurotransmitters. The doctors estimated she would live upwards of six years, which is to say a considerable amount of time filled with suffering. Bente would eventually live to die of "natural causes"—likely caused by a large dose of morphine—instead of being euthanized (Munson and Lague 2016, 516).

§3: POSITION IN FAVOR OF INFANT EUTHANASIA

The case of Bente Hindriks confronts us with a moral dilemma: should one let a child suffer throughout the duration of her lifetime, or terminate her life to eliminate the suffering? I believe that it is permissible to end the life of a child like Bente. In order to support my view, I will articulate what makes this case different from ones involving normal, healthy infants. The argument that I provide is heavily qualified, and to get a better understanding of the significance these qualifications have, I now turn to motivating and explaining them. In the three subsections that follow I consider each of my three qualifications that were first mentioned in this paper's introduction and connect each qualification with my central claim in favor of infant euthanasia.

§3.1: Qualification (i), Regarding Pain

The condition (i) *that the child is in regular extreme pain or suffering* is the basis for motivating the utilitarian considerations of the topic. Utilitarianism is the ethical principle that is concerned with assessing the utility which results from the consequences of actions. According to its simplest formulation, the ethical action is the one that promotes the greatest utility, or increases net pleasure or happiness for the greatest number of people.

At this point it is important for me to note that I do *not* take a "full" utilitarian position. My aim is not to present this discussion in terms of a simple utility calculation, because doing so would run contrary to my intuition, and most readers' intuitions, that infant euthanasia is generally impermissible. This is because the "full" utilitarian can't account for many cases of euthanasia (and killing generally) which are *prima facie* immoral. My aim in this section is to use some utilitarian *considerations*, in light of the fact that an infant with H-S, or conditions similar to H-S, is in extreme suffering, rather than taking a "full" utilitarian position. To illustrate why I don't take such a position, I consider two crucial components which make our considerations more complex, the concepts of directly and indirectly affected parties.

I will first classify the individuals to be considered. Since the child is the primary being to receive (or not receive) euthanasia, she is the directly affected party, and the parents and doctors who decide whether she is to be euthanized are the indirectly affected parties. They may be the ones making the decision to euthanize or not euthanize, but they are not the ones being euthanized. This point may seem trivial and unnecessary, but it is vital to understanding whose well-being we're considering in the first place. Before proceeding to my utilitarian-inspired analysis, I will note some important features of this distinction. It is uncontroversial to say that the parents of the child are going to be more poignantly impacted by any action or lack thereof rather than someone who hasn't seen the child's raw flesh or heard the child's shrieking. That is to say, to the extent they are affected by the child's life, they are to be considered in the decision to euthanize or not. It is important to clarify that this fact alone is *not* sufficient to weigh their interests on an equal footing to the infant's interests.

In addition to this point, it is important to note that we are dealing with a directly affected party who cannot give informed consent to carry out the euthanasia;

instead, this burden is left to the indirectly affected parties.[6] It follows that they are not only affected emotionally, but affected with the burden of deciding whether to euthanize or not, *ceteris paribus* and law-permitting. For the purpose of this paper I will point to the central intuition that many of us share, namely that when the directly affected party is one we are deciding whether to kill, the indirectly affected parties' utility doesn't factor into the calculation in the same way as the infant's utility. Rather, it will always take a secondary role to the infant's utility.[7] To demonstrate the importance of this provision, consider that the parents of a child like Bente choose not to euthanize her because of the emotional trauma that they would feel if they permitted it to happen. In spite of the fact that they may have reason to euthanize their child and choose in her best interests, they choose not to because of their own interests. They may rationalize this in whichever way they choose, perhaps by claiming that the interests of rational adults outweighs the interests of an infant. I, and many others, would not be convinced. The point is that when the parents' interests hinge so much on the continued, considerable suffering of their child, it is unreasonable to weigh their interests over their child's interests. The suffering of the child will always take precedence over *any* possible suffering the parents experience due to the child's medical condition, and the reason for this is because the child is the directly affected party.[8] The "full" utilitarian would be very skeptical of applying these ideas of direct and indirect parties into calculations. If this "full" utilitarian is committed only to simple utility

6. That the child can't give consent can be taken to be an objection, but this is misguided. No infant can give consent, but that doesn't mean that we should reject all medical procedures for infants. The "full" utilitarian, if his commitment is as strong as he may claim, will deny the importance of informed consent altogether. I only use it in this discussion to highlight what limitations existing medical standards may present to him.

7. This is to say that even if the parents' suffering might outweigh that of the child in a typical utilitarian calculation, here I am insisting that there is a *categorical* difference in the way in which their suffering should factor into this decision. In this way my position is similar to John Stuart Mill's when he invokes qualitative (categorical) distinctions as well as quantitative distinctions in measuring utility.

8. In many cases, this is equivalent to saying that there is more utility at stake in the loss of life than in the grievance over a child. However, even if this were contested by arguing that the parents' utility outweighs the infant's, I would still maintain that, since the parents' utility takes a secondary role, it will never compete with the infant's utility. This is true no matter how severe and crippling the emotional trauma they face, since they are not the directly affected party their utility will be in a league of its own.

calculations, then there's no way he can account for them and, in neglecting to do so, he would be defying the aforementioned intuitions. For these reasons I only employ utilitarian considerations, rather than taking a fully utilitarian position.

With these clarifications foregrounded, we can take a look at what the utilitarian considerations can provide for this argument. The proposed good in euthanizing a child like Bente is to *avoid* suffering. This is to say that the utility in favor of infant euthanasia is in the net reduction of suffering. Recall that the child has all of the physiological necessities to experience pain, and is indeed experiencing it invariably. Since the proposal of undertaking infant euthanasia is to alleviate the pain of such a child, this qualification is necessary. At this point we need to consider how best to approach euthanasia.

Recall the discussion of active and passive euthanasia in §1. Since it is the case that active euthanasia will typically entail a faster, more painless death than passive euthanasia, and we are interested in reducing suffering subject to the conditions outlined above, we must consider the degrees of suffering which each entails. It is useful to provide a sketch of these degrees. Consider the "ranking" below:

Active Euthanasia > Passive Euthanasia >> Late Euthanized Death >> No Euthanized Death
[Least Suffering]----------[Most Suffering]

To the left of the ">" is an action that entails less suffering than the one to its right. To the left of each ">>" is an action that entails *substantially* less suffering than the one to its right. Though I am not sure if this sort of ranking can be defended with a straightforward argument, the intuitive plausibility of it should be apparent to most readers. While I have the urge to say the actions on the left side of the spectrum are morally preferable to those on the right, I do not have the tools to provide this as a rigorous argument. In rejecting the "full" utilitarian position in favor of wanting to line up with commonly-held and deep-seated intuitions, it appears that I may forfeit the possibility of ever having such tools. In spite of this fact, the conclusion is still compatible with my overall position. I am arguing that there exist cases where infant euthanasia is permissible, *not* arguing that such cases are ever obligatory. This leaves open the possibility that one need not euthanize at all. The reasons for this will become clear in §3.3.

This utilitarian analysis points to the permissibility of euthanasia because the one feasible way of significantly reducing suffering for the child is to euthanize, as will be shown in §3.2.

§3.2: Qualification (ii), Regarding Possible Action

The condition (ii) *that there is no present or prospectively viable course of action that will improve the child's condition* displays the problem that a lack of effective treatment poses. Were there to exist a way of curing or, at the very least, treating a genetic disorder such as H-S, there would exist a way of combating the suffering associated with the disorder. At the present time there are no available resources which will accomplish this. On the contrary, many efforts to help someone like Bente only served to worsen the condition. For instance, medical practitioners "bandaged her raw flesh where the skin had peeled away, but when they changed her bandages, they tore off even more skin. *No medical intervention seemed to help* [emphasis mine]" (Munson and Lague 2016, 515). In such circumstances, there simply is no other alternative to reducing extreme suffering besides euthanasia.

In order to provide a point of contrast to untreatable H-S, I'll contrast such a condition with a congenital disorder known as duodenal atresia. In this disorder, the entrance to the small intestine (called the duodenum) is closed off due to atresia (a closure or narrowing). This entails that food from the stomach cannot enter the small intestine and be digested. Unlike H-S, "[s]urgery can repair this condition and is successful in most cases" (Munson and Lague 2016, 529). Indeed, surgery is so successful that Escobar *et al.* find that in the 12% of cases in which late complications occur, only 6% of those result in mortality (Escobar et al. 2004, 867). In cases of duodenal atresia, medical interventions do help. Qualification (ii) does not apply to such cases of duodenal atresia because there exists a course of action to improve the child's condition.

The preceding discussion may make a reader consider cases where a present effective course of treatment may not exist but where an experimental and questionably effective one does. Qualification (ii) accommodates for this fact, and the consequence is that such *prospective* treatments should be attempted prior to undertaking euthanasia. This effort is subject to the discretion of the medical practitioner and should be consistent with the conclusion reached in §3.1 regarding the net reduction of suffering. That is to say, were such prospective

treatments to be developed, they ought to be applied only if they can be seen to provide a net reduction of suffering. For instance, putting more bandages on Bente would *not* be a prospective treatment for it would only result in greater net suffering.

§3.3: Qualification (iii), Regarding Human Life & Value

The condition (iii) *that there is no potential for the child to live a recognizably human life* appeals to the significance of what we would consider to be a life worth living. To provide my reasoning for this qualification I will briefly shift gears and use features of an enticing anti-abortion argument contained in Don Marquis' "Why Abortion Is Immoral."[9] Marquis argues that what makes abortion immoral isn't so much that a fetus is a "potential" human being, but rather that there is one property which *most* fetuses share: a future of value like ours, herein abbreviated as FOVLO (Marquis 1989, 189-94). It is not just fetuses that have FOVLOs. According to Marquis, this is the same property that makes killing an adult wrong (Marquis 1989, 201-2). He notes that "[t]he loss of one's life deprives one of all the experiences, activities, projects, and enjoyments that would otherwise have constituted one's future. Therefore, killing someone is wrong, primarily because the killing inflicts (one of) the greatest possible losses on the victim" (Marquis 1989, 189). It does not limit what these experiences, activities, etc., are. Moreover, "[t]he future of a standard fetus includes a set of experiences, projects, activities, and such *which are identical with the futures of adult human beings and are identical with the future of young children* [my emphasis]" (Marquis 1989, 192). The beings that have a FOVLO, the FOVLO-bearers, either have the property or don't; it does not admit of degrees.[10] The fetus that has the property has it in the same way that a sixty-year-old adult does. Fetuses and infants, even though they may not have current engagements like adults do, have a future of engagements that provide value to their lives. To be deprived of this FOVLO is to be wronged, for it would take away that property which makes our lives worth living and lends itself to our ability to flourish.

9. This may at first seem counterintuitive because it seems unlikely that any ideas in opposition to abortion may actually be used in support of infant euthanasia, but this is not the case.

10. To the extent that FOVLO doesn't admit of degrees, it can be regarded as a *threshold*, rather than a scalar, account.

compos mentis

Before delving into the argument for how the FOVLO property factors into my thesis, there is first a need to clarify in more detail what is meant by the property, and what it entails. The following subsections constitute a lengthy but necessary commentary that cover the necessary and sufficient conditions of the FOVLO, an account of moral status, and the application of the property.

§3.3.1: Necessary and Sufficient Conditions

There are a number of things to be said that regard the necessary and sufficient conditions of the FOVLO. I consider two aspects: the necessary and sufficient conditions as they relate to 1) FOVLO-bearing beings, and 2) the use of FOVLO in my argument. Addressing (1) will clarify what makes this view distinct from a personhood account, and addressing (2) will provide an important foreground to how the FOVLO property can be applied to cases of infant euthanasia.

A FOVLO is a property that all biological humans, whether in a womb or outside, *potentially* have. Note, however, that it is not necessary that a being be a human to have a FOVLO. Indeed, Marquis himself makes this very suggestion, writing "[i]t is possible that there exists a different species from another planet whose members have a future like ours" (Marquis 1989, 191). He also leaves open the logical possibility that certain non-human animals on our own planet have a FOVLO. From these considerations we can conclude that being a human is neither necessary nor sufficient for possession of a FOVLO. At this point, some readers may be curious about FOVLO's bearing on the concept of "personhood." I take it that one virtue of this approach is that there is absolutely no need to frame this conversation in terms of personhood (or for that matter, "potential" personhood). This is one of many benefits in using a property to ground the ethics of infant euthanasia, and for this reason I won't need to consider the many controversies surrounding how to properly define personhood. I follow Marquis here when he writes "[t]he category that is morally central to this analysis is the category of having a valuable future like ours; it is not the category of personhood. [We can proceed] independently of the notion of person or potential person or any equivalent..." (Marquis 1989, 192).

Some readers may take the above to provide a hefty blow to Marquis' argument, because it appears that we can't attribute a single necessary condition to the kinds of beings which possess a FOVLO. I believe this is mistaken. Insofar as what is morally relevant is the FOVLO property, the only necessary condition is

that the being have it, regardless of any notion of "potentiality," "personhood," etc. Moreover, it is pertinent to note that our interest rests in identifying the beings that do not possess a FOVLO, rather than those who do. We know that most human beings possess a FOVLO, but when we identify one that doesn't have this property and for which there is reason to believe that euthanasia is justified, then (in conjunction with qualifications (i) and (ii)) we have all we need. Needless to say, part of the purpose of this paper is to demonstrate that there exist such biological humans, like Bente Hindriks, who do not have such a FOVLO. What this analysis provides us with is a useful corollary: An ethics of infant euthanasia requires that we need only guarantee that a being *doesn't* have a FOVLO, instead of having to guarantee that a being has a FOVLO.

Next, I'll consider the necessary and sufficient conditions of the FOVLO property as it relates to my argument, rather than its bearers or non-bearers. Thankfully, this is much more straightforward than the preceding discussion. I see the role that the FOVLO property plays in my argument as having both a sufficient *and* necessary part in my account of the ethics of infant euthanasia. The following conditional results:

> (S): If an infant lacks the FOVLO property, then it is a potential candidate for euthanasia.

In this context, a potential candidate for euthanasia is one that satisfies qualifications (i) and (ii), which were argued for in §§3.1-3.2.[11] Similarly, the converse holds:

> (N): If an infant is a potential candidate for euthanasia, then it lacks the FOVLO property.

Accordingly, the FOVLO property functions as a kind of baseline, after which utilitarian considerations take hold; if it's satisfied, and we have reason to believe

11. One may be curious here on whether (S) commits me to the view: "If an *adult* lacks the FOVLO property, then it is a potential candidate for euthanasia." I believe that it may, although I will not argue for this point because it is outside of the scope of this paper. "Potential candidate" needs to be interpreted cautiously, because in many cases consent is possible when considering adults. Marquis is relevant on this point, and he notes that "the claim that the loss of one's future is the wrong-making feature of one's being killed does not entail, as sanctity of human life theories do, that active euthanasia is wrong. Persons who are severely and incurably ill, who face a future of pain and despair, and who wish to die will not have suffered a loss if they are killed" (Marquis 1989, 191).

euthanasia is appropriate, then euthanasia is justified. One consequence of this reasoning is that the wrongness of an *unjustified* infant euthanasia rests on the fact that the ethical baseline, the baseline of possessing a FOVLO, is not respected where it in fact held by the infant. This can be shown to be logically equivalent with the help of a simple contrapositive of (N):

> (N'): If the infant *has* the FOVLO property, then it is *not* a potential candidate for euthanasia.

In such a case, the alleged intentional mercy-killing or "letting die" of the infant would not be justified. In terms of its broader discussion, this analysis helps suggest why general infanticide is wrong; it deprives the FOVLO-bearing infant of its future. FOVLO-bearing infants are, of course, most infants, but as we've seen it is unfortunately not all. Next I'll consider how this property factors into our understanding of moral status.

§3.3.2: The Moral Status of Infants

This entire discussion wouldn't be fruitful if we didn't have the means to apply it. The preceding discussion welcomes a very important question: What is it that makes general infanticide, or unjustified infant euthanasia, *morally impermissible*? In order to answer this question, we must first get clear on the moral status of infants. So far, we've established two things that will be useful in this discussion: that most infants have a property, a FOVLO, and that ending a FOVLO-bearing infant's life is what makes killing them wrong. However, it is not immediately clear that a FOVLO is what guarantees infants' status in the moral community. To illustrate this point, consider a common attitude toward non-human animals. Most people hold that it is impermissible to senselessly kill animals. Yet, they would also hold that animals don't hold an equal moral status with humans. A common means of demonstrating this point in the discussion is that, when presented with a scenario where one may save either, say, an unknown dog or an unknown human (but not both), most people are going to opt to save the human.[12] What this

12. Of course, this is not a universal attitude, but instead merely a common one. It is also not essential to my argument. I am merely using it as a means of illustrating different conceptions of moral status.

commentary demonstrates is the existence of different schema of status holders. I will next articulate what I believe these different categorizations to be.[13]

In order to do this, I'll take the conversation back to infants. It seems problematic to say that an infant is a moral agent *in the same way* that an adult, fully rational person is. What the FOVLO property provides us with is the following observation: an infant can have a title to life, can have a property which makes it *morally impermissible* to kill it if the appropriate conditions are present, but isn't a moral agent. At this point, a distinction is appropriate. Among the set of beings which hold *moral status* are *agents* and *non-agents*. I argue that (most) adults fall into the former category, and infants fall within the latter category. The motivation for this distinction comes from the fact that one can consider both an infant and adult to be FOVLO-bearers, but at the same time maintain that there is some criterion (or criteria) lacking for the infant to be a moral agent. The FOVLO property is not sufficient by itself for agency. We do not hold infants responsible for their acts in the way that we do adults. So what do adults have that infants don't? While it would be outside of the scope of this essay to provide a thorough answer to this question, I will provide at least a tentative one because it affords us a crucial insight into an infant's moral status.

I believe that what differentiates the agent from the non-agent rests in the idea of positive moral expectations.[14] A *positive moral expectation* is one which applies only to agents who are expected to perform an action *and* are able to perform this action.[15] We have a moral expectation for the agent who has to save either the dog or the human. He must perform an action otherwise he is acting immorally. On the other hand, a *negative moral expectation* is one which applies to both agents and non-agents, and regards what can't be done to either. This division makes intuitive sense--we wouldn't expect an infant to make the choices which create an increase in net good or to carry out duties. Yet, we also don't think it is morally permissible to senselessly harm infants. Negative moral expectations

13. For a much more thorough discussion on these gradations see Jeff McMahan's "Infanticide"

14. Another possibility that is commonly put forth is rationality. One may claim that agents are rational whereas non-agents aren't rational. I do not dispute that this is case, but I also don't think it is appropriate to adopt because it doesn't explain *why* non-agents shouldn't be harmed, which is the objective of this section.

15. This latter condition is important because expectation alone is not sufficient to determine agency. The agent is able to perform a particular action and, consequently, also able to not perform the action (which helps explain why we can hold others accountable).

for what we can't do to both moral agents and non-agents exist in light of their status, not the condition of agency.[16]

If a being possesses a FOVLO, then there exists a negative moral expectation to not deprive it of its future. If a reader is persuaded by rights-language, this is compatible with saying that FOVLO-bearing beings have a *right to life*. Marquis suggests the same when he writes that the "value of a future-like-ours theory of the wrongness of killing shares strengths of both sanctity-of-life and personhood accounts while avoiding weaknesses of both" (Marquis 1989, 192). In this paper I take no position on whether "rights" exist, and I leave this open for the readers to fill in should they wish. We now have everything we need for the application to the real-world example provided in §2 and examples sufficiently similar to it.

§3.3.3: The Application

My intuition is that infant euthanasia is *prima facie* wrong, and the argument contained in this final subsection is to conclude that this intuition is sometimes misguided. The task at hand now is to extend Marquis' account to infants who lack a FOVLO and to examine those cases which aren't immediately evident. In order to do this, I will first quote Marquis at length to show the implications of the fringes of his theory and then apply these ideas to my argument.

Marquis writes that "ordinary killing could be justified only by the most compelling reasons," and, with regard to abortion, "[it can be justified] only if the *loss consequent on failing to abort would be at least as great* [emphasis mine]" (Marquis 1989, 194-6). To extend this idea beyond mere abortion, consider the claim that "[p]ersons who are severely or incurably ill, who face a future of pain and despair…*will not have suffered a loss* if they are killed." While depriving one of the value of his future is what makes killing wrong, "killing *does not necessarily wrong* some persons who are sick or dying [emphasis mine]" (Marquis 1989, 191). With these ideas put forth, we can piece together their significance to the topic at hand.

A child like Bente fits this above description. She is severely, incurably ill and faces a future guaranteeing pain and despair. Euthanizing her would not be wrong because she will not suffer the loss of a FOVLO because she simply has no FOVLO.

16. Influence for this discussion comes from Strawson's "Freedom and Resentment." While I do not borrow his terminology, I certainly am indebted to his insight on these issues. For a more thorough discussion on topics that relate to moral expectations, see this essay.

The "loss" in not euthanizing her is greater than simply letting her genetics take their eventual toll, for any continuation of her life is a continuation of invariable suffering combined with the lack of any recognizably human life. Qualifications (i)-(iii) provide us with the compelling reasons that Marquis suggests we need to justify killing.

§4: OBJECTIONS & RESPONSES

The following objections (Obj) and responses (Res) will showcase the strength that the qualifications have when combined, and the faultiness of neglecting them.

Obj(1): There are things we can do in our world today which would result in a net loss of suffering but would be *prima facie* wrong. For example, consider a case where a *healthy* individual's life can be sacrificed to help several others receive organs and tissue necessary to preserve their lives, and that the only way to accomplish this is to do so without that individual's knowledge or consent.

Res(1): In spite of the fact that such an objection takes us away from infant euthanasia because we are now considering healthy individuals, the argument I have provided has the means to present a response. Such an effort to sacrifice this individual's life is not compatible with the ideas expressed in §3.3. It is wrong to make such a sacrifice because this individual has a FOVLO. To sacrifice him for the sake of others would be impermissible to the extent that doing so would be to deprive him of the value of his future. This also ties into the discussion in §3.1, where I make it clear that I don't take a "full" utilitarian position, but instead employ utilitarian considerations.

Obj(2): We don't know that a patient such as Bente won't get better. Preexisting or emerging technologies may be adopted to treat such a disorder like H-S in ways currently unforeseeable. She could be euthanized when treatment is or will be available!

Res(2): With regard to the potential usefulness of preexisting technologies, in §3.2 I note that alternative methods of treatment ought to be tried before carrying out euthanasia. Were physicians to anticipate that a treatment may work, it should be tried for its efficacy. However, with regard to emerging or soon-to-be emerging technologies, those are and should be construed as mere possibilities. Imagine having to live in the extreme suffering of someone like Bente for the duration of her life, hopelessly waiting for whatever new medical technology that may or may not be effective in treatment when she could have been justifiably

euthanized earlier. It is implausible to keep such an expectation for something so uncertain and, in some cases, maybe even impossible.

Obj(3): We all experience pain and suffering! It would be foolish to end the life of an infant, say, if it received a mild cut or bruise.

Res(3): Such an objection doesn't do justice to the fact that a child like Bente is in *regular extreme* pain. The choice of these two emphasized words is present in qualification (i) not to elicit strong feelings in the reader, but to distinguish precisely such cases. Furthermore, an otherwise healthy infant with a mild cut or bruise doesn't experience the pain associated with the cut or bruise for an indefinite period of time. Not to mention the fact that mild cuts and bruises heal. A condition like H-S doesn't heal and isn't treatable.

Obj(4): Where do we draw the line between those infants it is permissible to euthanize and those which it is impermissible to euthanize?

Res(4): This objection highlights the importance of the way that all three qualifications (i)-(iii) function together. A child with, say, Down Syndrome who isn't in the regular extreme pain mentioned in (i) wouldn't qualify. In addition, this same child likely wouldn't qualify because condition (iii) isn't met—most children with Down Syndrome have a FOVLO, the ability to flourish and live a satisfying life. The line is drawn *exactly* where qualifications (i)-(iii) hold.

Obj(5): This argument appears to embody a tension between consequentialist and non-consequentialist reasoning. On the one hand, we have a utilitarian framework, and on the other we have a property which prohibits the taking of a life which looks like a deonotological constraint. These appear to be incompatible moral principles--how do we make sense of them?

Res(5): This objection invites a clarification to my overall position. Recall the conclusion of §3.3.1: What the FOVLO property provides us with is a baseline for moral consideration. I noted earlier that I do not take a "full" utilitarian stance, part of the reason being because of this very baseline. What makes this baseline special is its role in determining an infant's moral status as shown. It is there to provide us with an understanding of why, in the case of a FOVLO-bearing infant, it is impermissible to consider killing or neglecting the infant and why, in the case of a FOVLO-lacking infant, it is permissible to consider infant euthanasia. It is only *after* we establish that an infant is FOVLO-lacking that utilitarian considerations come into play, rather than from the start.

§5: COMMENTARY & CONCLUSION

One related area of ethical conflict concerns the nature of autonomy, and who is to be identified as the final decider for infant euthanasia. To illustrate this conflict, imagine that Bente's parents opt to keep her alive for as long as possible but that her doctor urges that she be euthanized. In the aforementioned arguments I suggest that it is often the case that both parents and doctor agree on the appropriate course of action regarding infant euthanasia, but this fact alone certainly doesn't necessitate that this will always be the case. If my argument in favor of infant euthanasia is accepted, then this would be an excellent point for further discussion because it would help illuminate more about the agent(s) making the morally significant action.

Another direction that further discussion can take it is to consider how far beyond infancy and early childhood a similar approach extends. Imagine that there exists a disorder similar to H-S but, instead of being evinced very early, is instead realized in adulthood. This person will be in the same extreme suffering, subject to the same medical interventions to which Bente was subject, and would be just as untreatable. One important difference between these is that the person who gets the genetic disorder later in life has already experienced a recognizably human life, has had the ability to flourish. Some may say that this fact strengthens that person's title to life, for whereas he has commitments in life and goals to accomplish, Bente does not. In other words, Bente has not experienced a recognizably human life whereas the late-onset patient has. My qualification (iii) makes no mention of having once experienced a recognizably human life, and part of the reason for this is simply that the scope of the argument provided regards the ethics of infant euthanasia rather than euthanasia generally. Perhaps (iii) can be revised to present the stronger case about euthanasia in general, but such a modification will entail a proper justification for why past experiences are significant to the ethics of the case. To my understanding, Marquis' theory will not be able to supply what we would need to account for this because it is having the FOVLO property, rather than *having once had it*, that matters. It may just simply collapse into a discussion of how euthanasia relates to consent.[17]

17. I thank Chris Grau, Edyta Kuzian, Kelly Smith, Charles Starkey and Dan Wueste for their invaluable insight and commentary during the course of this paper's development.

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compos mentis

Free Will and Responsibility in the Neuroscientific Age

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ABSTRACT
As neuroscientists garner greater insight into one of the world's most complex and mystifying structures —the brain—we do not only achieve heightened awareness of the workings of our brains; we are also saddled with the laborious task of reconciling these findings with ordinary and longstanding philosophical conceptions of the mind. Contemporary neuroscience poses an apparent challenge to the concept of free will. As behaviors are attributed to inner structures and workings of the brain, is room left for freedom? If our thoughts and behaviors are determined by inner physiological structures and neuronal processes, how can we make genuine choices? If there are no genuine choices, is anyone responsible for their actions? Drawing on philosophic resources, I will defend robust notions of freedom and responsibility that demonstrate. The objective is to provide a resolution of these tensions that can enable us to properly employ neuroscientific concepts, particularly in legal contexts, without subverting our humanity.

KEYWORDS
Neuroethics, Free Will, Responsibility, Agency, Compatibilism, Criminal Law, Technology

Consider the 1991 case of the Manhattanite Herbert Weinstein, who was charged with the violent murder of his wife. Due to his affluence, he was able to access and procure a positive electron transmission (PET) scan that demonstrated a cyst had formed on his brain. The defense presented this scan as viable evidence, claiming that the abnormality had caused the defendant's violent behavior and that he should be exonerated, despite the fact that the accused had no previous signs or symptoms of brain abnormalities or mental illness (Davis 2012).[1] The evidence persuaded the jury to reduce the charges from first degree murder to manslaughter (Rosen 2007) . Now consider the case of George Franklin Page, a Vietnam veteran suffering from undiagnosed and untreated PTSD, alcoholism, and other possible mental disorders with no previous record, who was prosecuted for murder and sentenced to death in North Carolina in 1995. Page had been denied a full psychiatric workup, which would have included neuroimaging, but then received treatment for apparent PTSD and bipolar disorder while he was on death row. Despite pleas to investigate his mental health, he was unable to access such diagnostic measures and care and was executed in 2004 (Amnesty International 2004). Chances are high that if permitted access to such testing, a scan (or other measure) would've revealed brain dysfunction, rendering him unfit to be subjected to the death penalty.

These blatant discrepancies and discrimination highlight the controversial issue of the implementation of neuroscience data in criminal law, particularly how it confounds our concepts of free will, personhood, agency, and responsibility.[2] As we learn to attribute more behaviors to the inner structures and workings of the brain, is there any room left for free will? If all of our thoughts, actions, and behaviors are simply products of and determined by inner physiological structures and neuronal processes, how can we make genuine choices? If there are no genuine choices, no person can be held responsible for their actions. This line of reasoning has had severe consequences within the courtroom, leaving us saddled with the laborious task of reconciling neuroscientific findings with our beliefs in our abilities and freedom.

1. The judge decided the claim was not admissible, but by that point, the damage had been done and the insinuated claim had severe implications.

2. Contemporary neuroscience seems to pose a particular challenge and grave implications to the concept of free will, traditionally defined as "a particular sort of capacity of rational agents to choose a course of action from among various alternatives." See Stanford Encyclopedia of Philosophy for an in depth exploration of the concept of free will.

In what follows, I will argue that questions such as these, amongst others pertinent to our concept of self, responsibility, and blameworthiness, cannot be explored or answered by neuroscientific data. A philosophical solution is required to mitigate the ailments created by the improper and misinformed use of neuroscientific data as evidence in criminal law. The first section will explore the limitations of Neuroscience, both technologically and metaphysically, in order to raise awareness concerning the flaws that are not thoroughly or properly discussed when such data is being implemented as evidence in the courtroom. Section Two will examine the dangerous consequences of the unquestioned faith that has been placed in the facts and figures provided by scientific data.

However, it is not the intention of this paper to discredit or dismiss the importance of Neuroscience as a field or the advances in technology that are beneficial nor further the divide between philosophy and science. Sections 3 and 4 will follow into a discussion acknowledging the extremist incompatibilist views of hard determinism and dualism that arise from misuse of Neuroscientific data and the solution in accepting a compatibilist view. I will provide an in-depth scope of the philosophical concept of compatibilism and how informing and reshaping the law via philosophy will not hinder science, but rather provide a solution in which the metaphysical and empirical realms can coexist and work alongside one another.

Now more than ever, philosophical solutions are needed in order to create a more informed and proper use of neuroscientific evidence, which has become not only a powerful and dangerous tool but a source of discrimination skewed in favor of the affluent who have access to such treatment and care. Consequently, as discussion will follow in Section 5, this philosophical exploration also will be framed in the practical context of a controversial issue concerning limit of access to healthcare and neuroscience technology that those in a low socioeconomic status do not have the means to acquire. The final portion of this paper, Section 6, will reiterate the importance of establishing a foundation in philosophy in to correct the misapplication of neuroscience data. A proper solution will be found through the redirection and reformation of our conceptions of agency and free will in order to correct our misinformed speculative assumptions that tend to be derived from the presentation of neuroscientific data.

SECTION 1: THE LIMITATIONS OF NEUROSCIENCE

A practical point to consider when examining the validity of neuroscientific data is that technological limitations exist, which often leads to misuse of the data output and spread of false information and claims that go beyond the data. That the evidence does not fully support the claims being made raises the question if this evidence should even be permissible in court. The rise of the use of neuroscientific technology, particularly that of functional magnetic resonance imaging (fMRI), Brain Fingerprinting, and memory-encoding-related multifaceted Electroencephalographic Response MERMER, amongst others, are landmark discoveries and revolutionary techniques for diagnosing and understanding the workings of the brain, but they are not without flaw. At present, they are being implemented in order to explain behaviors, though are far from having the capability to do so. While they provide an accurate picture of neurobiological structures and processes, they do not provide a landscape of how conscious thoughts and behaviors can be derived from a pinpointed location within or on the brain. Due to the inaccurate assumptions that appear to be derived from neurodata, it seems to be the case that brain scanning may not be admissible in court, for while it can display diagnostic markers for conditions, it does not discriminate what behavior or mental state can be correlated with brain activity. For instance, an individual may be subject to a MERMER scan in order to see what areas of the brain light up when they are asked to recall certain information. However, while the test may indicate an area correlated to memory, it cannot demonstrate that the specific memory of the crime was recalled, but rather a similar event that they may have experienced (Pardo and Patterson 2013).

A more persistent interpretive concern that arises with utilizing such technology to measure behaviors is the contradictions that appear. A brain can appear abnormal although the person is fully exercising their rational capacities in a normal manner, and vice versa. For instance, a person may exhibit a significant portion of their brain is covered with a subarachnoid cyst, which appears to be a deviant from a normally functioning brain, but the cyst may not cover or impact the prefrontal cortex, the portion of the brain controlling decision making, planning and execution. This discredits arguments centered around conscious agents' capability to rationalize and deliberate. How do we account for such cases? How is the legal system supposed to ascribe proper punishment to someone presenting

significant brain abnormalities, yet fully capable in their ability to reason? No scan can answer this question.

Unfortunately, this is how the technology is sometimes implemented, despite the absence of an argument for the underlying assumption that human consciousness and behavior can be measured by a machine. A failure to appreciate these limits has led the propagation of misinformation, leading us further from the truth and towards a dangerous reality of neglecting the agency of the individuals and the reduction of personhood to neurobiological processes. If we continue along this trajectory, the importance of preserving personhood and protecting agency, free will, and responsibility will be relinquished, propagating misinformation and a accepting a mechanistic view of human beings, eradicating the notion of sentience.

Turning to philosophy may provide insight. For while images of a seemingly abnormal brain cannot produce a causal explanation between neuronal activity and conscious behaviors, philosophical conceptions can assist in comprehending the notions of rationalization and conscious mental processes. In cases where a person has an evident abnormality but is consciously aware of their decisions, the law can be guided by understanding the concept of agency and rational capacities, for judging one's actions and rationality is not a matter of science. For what scientific data cannot uncover and the code of law does not include, philosophy may provide: helpful insight when concerning one's conscious behavior, not by quantified measurements but rather supported and widely accepted views on rationality.

SECTION 2: THE DANGEROUS CONSEQUENCES OF UNQUESTIONED FAITH

There is a grave danger in the sheer power and influence Neuroscience holds on society's perspective of how to judge and conceptualize agents with abnormalities/disorders that contribute to their behavior. These misguided perceptions lead people to blindly follow empirical data and instill total, unquestioning faith in science, regardless of the imperfections and errors that routinely occur, further perpetuate the misuse and abuse of Neuroscience technology and data. For example, a common phenomenon in criminal law is "The Christmas Tree Effect," wherein an image of a brain that is colored and "lit up like a Christmas tree," subsequently influencing the jury's decision, purely due to the presentation in

front of them, regardless of the further evidence provided (Davis 2012). Permitting this effect to continue by allowing such images and faulty/inaccurate explanations alongside the presented data are shielding individuals from the truth, which cannot continue to occur if progress is to be made.

Inquiries concerning the validity and reliability of such measures come into question, for while statistics such as "0 percent error" or "99.9 percent reliability" when discussing the accuracy of the P300-MERMER test appear confidently accurate, it calls into question what aspect is truly reliable and valid of the measurements (Pallares-Dominguez and Esteban 2016). The results yielded from these measurements may appear concrete, but they are not all encompassing and require scrutiny and interpretation if they are to be implemented correctly. What exactly are the numbers and figures produced by tests such as the MERMER exactly telling of? Are they describing the recognition of stimuli or are they telling of an admission of guilt (Pallares-Dominguez and Esteban 2016)? It is near impossible to denote what measurements are telling of what brain activity, especially if the activity being measured is of the individual at present, if that was their brain state at the time of the incident, or another non-related circumstance (Pallares-Dominguez and Esteban 2016). Although such devices are impressive and seemingly reliable, it is a misguided notion to instill faith in such technology for it is not telling of conscious thought or behaviors and further propagation of such tools by citing reliability and validity rates is a treacherous path to continue following down.

The danger in the influence this neuroscientific data is that the misuse of information follows an implicit stance on hard determinism, suggesting the agent has no free will and is predetermined by their structures, eradicating consciousness and the person themself. This presumes causal claims between neurobiological processes and the person's behavior, which at present, we are unable to make. Since technology has not advanced enough to catch up to such ideas, especially as there is no scientific way to measure consciousness, these claims and their applications are premature.[3]

3. A notable study that has had incredible influence on the field is the Libet Experiments, wherein it was recorded that neurons fired milliseconds before a decision was consciously made and executed. Libet's findings shaped and perpetuated the notion that humans are not free of will and are in fact, at the fate of their anatomy. Although this presupposes that the mind is a substance that can be quantifiable, in a Wittgensteinian fashion, it is a conceptual confusion to assume that the mind is a substance (Pardo and Patterson 2013). It must be noted this is not advocating for

SECTION 3: EXTREMIST VIEWS AND THEIR MODERATE COMPANION: COMPATIBILISM

Eagleman, Greene and Cohen in particular uphold the favored scientific explanation by taking a hard determinist stance through promoting causal claims of neuronal activity and a person's behavior.[4] This view emphasizes the notion that our neurobiology determines our actions and our actions are inexplicably bound to our biology, eradicating any sense of a sentient being with free will who is responsible for their actions. This is a mechanistic view, reducing the human to a machine at the will of their pre-wired brain who cannot act beyond their natural, predetermined settings. If a conscious agent is considered to be at the will of only their anatomy and biological processes, then we cannot consider them free, conscious beings. If this line of reasoning were to be upheld by society and particularly in criminal law when determining the fate of the defendant, then no one could be held accountable for their actions, for every person would be understood to be at the mercy of their brain and not able to act otherwise.[5]

The rise of hard determinism has prompted an equal and opposite, reactionary danger suggesting consciousness lies in the mind, a separate entity distinct from the body, suggesting a radical notion of total uncaused free will. This view appeals to followers of the dualist school of thought who believe the brain should be treated separately from the mind, for while neuronal processes may exist in the brain, they do not exist in the mind. Therefore, one's rational capacities and ability to deliberate are unscathed by the brain or any myriad of physical factors that would normally be taken to influence one's decision making, such as neuronal activity, chemical imbalances, or structural abnormalities. The result is that the agent is radically free and all actions and behaviors uncaused.

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a dualist position, for this claim does not imply that the mind is a separate entity from the body, rather the mind is not a substance that can be quantified or measured as consciousness is not tangible and subsequently, not accessible for empirical testing.

4. For further information concerning Eagleman's exploration into legal cases ascribing violent criminal behavior to predetermined neuronal connections and activity see his article, "The Brain on Trial."

5. It is important to consider how punishment is handled, for at present our legal system focuses on a retributive system of justice (punishment fitting of the crime), though neuroscientists are urging for a rehabilitative stance of punishment as well as preventative). The opposition to a rehabilitative/preventative system of justice, as noted by Morse, seems to be degrading to our humanity by incarcerating those before crimes have been committed.

Dualists in favor of free will may claim that there are neuronal gaps or spaces in the brain that allow for unpredictable events to occur and, hence, that provide a space for free will. But this is misguided/unnecessary. Free will is not predicated upon biological space nor does it imply for an event to be free it must be unexpected. In fact, if we are at the will of an unexpected, uncaused event, we are not free (Kane 2005). Uncaused events cannot be considered free, for if there is a random firing of neurons that causes a person's arm to jolt up, they did not freely choose to move their arm; they were at the will of an unpredictable event where they could not have freely chosen to do otherwise. We need to be able to acknowledge and discuss the relevance of a person's anatomy and biological processes while taking into the account they are a rational, intelligent beings with capacities beyond those dictated by their neuronal connections. Dualism presupposes the notion that the biological processes are largely irrelevant, which is not beneficial when considering a person, for while human beings are not machines, we do experience biological processes that influence behavior.

To avoid the hard determinist and dualist extremes and their untenable consequences, we must return to the question--what does it mean to to choose and will freely? What are the conditions of responsibility? To address such queries, I will draw on compatibilist resources in order to provide a comprehensive understanding of the assistance philosophy can be when crafting beliefs and judgments on agents and their behaviors.

To satisfy conditions in order for our "willings" to be free, one must first consider what approach to take when examining what is free, be it our willings, our actions, or both. The compatibilist approach is rooted in the notion that determinism and free will are compatible with one another, which is to say that freedom doesn't depend on the absence of causal determination. Rather, freedom depends on the right kind of determination. Roughly, a free action is one that is caused by the agent's own desires rather than constrained by someone or something that is external to the agent. Classical compatibilists who crafted the basis of these arguments, such as Hume, claim that free actions are unconstrained but not uncaused, for they express our characters and intentions for which we can be considered responsible (Kane 2005). This is a crucial foundation to build a solution upon, for compatibilism is a voice of clarity amongst the chaos, providing a stance that considers the practicality of neuroinformation as well as tending to the metaphysical issues that arise concerning agency and responsibility.

Although it can be objected that compatibilism only accounts for freedom of action and not encompassing of will, for the focus of freedom is on the ability to will one's actions in accordance with one's desires, more recent compatibilists contend that not just action but will as well can be in accordance with determinism. Frankfurt and Wallace provide a more contemporary viewpoint, drawing on a notion of psychological freedom that is not hinged upon a broad, metaphysical sense of freedom, rather turn inward and explore internal freedom through personal desires, values and volitions. They acknowledge that desires and values themselves have a determinate cause from previous background. But having a cause does not make these desires unfree, according to the compatibilist, so long as they are reflectively endorsed by the agent who has them.

In the context of applying such concepts to the empirical testing and data of neuroscience, it is an undeniable truth that "human rationality and human freedom are determined neither by the images provided by functional magnetic resonance images (fMRI) nor by the person's own brain" (Pallares-Dominguez and Esteban 2016). As satisfying as it would be to be able to run a test and determine the capabilities of one's rationality or measure freedom quantitatively, it is not at present nor in the imminent future a real possibility. But philosophic compatibilism enables us to see how desires and actions can be both caused by brain states and also free. If we ever were in a position to demonstrate that actions are caused by brain states, it would not follow from this that they are unfree. It also would not follow from this that they are all free. According to the compatibilist, whether or not an action is free depends on the specific nature and manner of its cause. It would be incoherent to assume there is a deep sense of free will that cannot be attached to a determinate cause.

SECTION 4: A COMPREHENSIVE EXPLORATION OF STEPHEN MORSE'S COMPATIBILIST VIEW

As research delves deeper into the brain and attempts to create causal relationships between neuronal patterns and behaviors, and seeps into the courtroom in an attempt to explain criminal behaviors, the greater our notion of personhood, free will, and responsibility are impeded and compromised. A hard determinist stance is influential, claiming all thoughts, behaviors, rationality, and actions are predetermined and can be explained by neuronal connections and levels of neurotransmitters within the nervous system. Fortunately, the tension

that arises can be soothed by a firm philosophical foundation, such as that offered by Stephen J. Morse, who takes an unyielding stance that emphasizes the importance of not allowing neuroscience evidence and technologies to seep into the legal system and relies on philosophy to reconcile the predicaments that arise in the court when prosecuting criminals with atypical circumstances (such as mental illness, brain abnormalities, environmental factors, and so on).

Through his exploration into the relationship between neuroscience, criminal law and philosophy, Morse denounces the use of neuroscience evidence and technology shaping the doctrine of law, particularly the notion that all conscious agents are to act in accordance with the workings of their brains, therefore no agent can be held responsible for their actions. Despite the fact the influence of neuroscience is rebuked, it is not discrediting the findings, for it is upheld that the brain and the inner connections do in fact enable the mind and action, but despite all evidence incurred thus far, it is impossible to know why and how this occurs. Consciousness cannot be empirically tested or attributed to an empirical value, therefore neuroscience evidence cannot stand alone as enough in the court of law. Instead of focusing attention on the cause of thoughts, actions and behaviors, which is too insurmountable of a feat to even attempt, Morse suggests shifting attention to understanding and progressing the notions of mental states and actions, stating: "The brain enables the mind and action, but we have no idea how, despite all the astonishing advances in neuroscience and other disciplines" (Morse 47).

The discussion of mental states is fundamental to comprehending not only determinism, but the causal and rational capacities of humans, for while it is debated what a mental state truly is, as each discipline has a different perspective on the definition of a mental state, it cannot be disputed that mental states exist and are a foundation to actions perpetrated by humans. In the eyes of the law, a person is a conscious, rational agent that acts on intentions incurred by mental states, wherein these behaviors can be modified by external and internal influences (Morse 51). Though, it must be taken into consideration that persons may act without or before deliberation and the rational capacity of some persons may not be fully functioning to a normal standard.[6] These cases, along with those

6. For further consideration on the Aristotelian conception of the necessity of deliberation and rational capacities for free will, consult Susanne Bobzien's article "Choice and Moral Responsibility" (NE iii 1–5) in *The Cambridge Companion to Aristotle's* Nicomachean Ethics.

of agents acting intentionally and who are conscious of their intentions, raise the notion of who truly is responsible and can be held accountable for their actions. As these philosophical issues arise, Morse emphasizes that one should remain grounded in the practical application of these notions, particularly adhering to the model of folk psychology and common sense, for the common conceptions of such notions are upheld in the layperson's ideology which, in turn, influences the legal system and how to rationally and equitably judge others' characters and actions.

In crafting a solid foundation for his argument, Morse aligns with the ideology of compatibilism and the so-called "Causal Theory of Action (CTA)," as they are secure notions of free will and responsibility that are compatible with determinism and do not give rise to as many complications as libertarianism or hard determinism do. CTA roots itself in the notion that an event, be it behavioral or mental, can be considered an action if it is caused correctly in accordance with a mental state (Morse 48). This supports the notion that determinism can align with common sense and folk psychology, as Morse upholds these notions throughout his exploration into the legal system. It should also be taken into account that he suggests throughout the piece the direction neuroscience should take in shifting their perspectives to allow for these philosophical notions to work alongside the empirical data instead of eradicating it, as demonstrated by the claim: "The task of neuroscience should be to explain agency, not to explain it away reductively" (Morse 48). When discussing determinism in the sense of nonreductive physicalism (conscious agents have a brain/mind that is one substance but can be the source of both physical and mental properties) and compatibilism, it seems that responsibility is irrelevant to consider, for every behavior and mental state has a cause therefore the agent cannot be responsible, but it is assured this is not the case (Morse 49). As a compatibilist, Morse claims that responsibility can be genuine and exist in a deterministic universe for agents have the capacity to determine actions by reasoning, which, at present, cannot be contested by any current neuroscientific research (Morse 49).

As Morse notes, using neuroscientific data in the court influences our perception of selfhood, responsibility, and blameworthiness. If a scan of a defendant's brain is shown to a jury, demonstrating a tumor on the surface of the brain, but the defense does not explain that the large mass present does not affect the person's rational capacities, the jury will be lead to believe the abnormality is responsible for the

course of action the defendant took. This eradicates the notion of the person being as a conscious agent, for it shifts all blame to the person's neurobiological processes, neglecting that the brain being displayed is attached to a person who is an intelligent creature capable of higher order conscious processes, such as reasoning and rationality.

Morse argues that science should not have a place in revolutionizing the law, especially as the technology has not caught up to how neuroscientists would like to use it to explain behaviors. Brain and neuronal connections enable mind and action but at present, it cannot be known how exactly such actions are enabled and where exactly in the brain that connection can be traced to, despite all the evidence incurred. For example, there may be a lesion on the amygdala that controls opposing reactions and emotions, such as love and hate, and that area may light up on a scan when activated, but it cannot be pinpointed what particular emotion or behavior is exactly being stimulated. He is led from this line of reasoning to conclude that "if any science is to have appropriate influence on current criminal law and legal decision making, the science must be relevant to and translated into the law's folk-psychological framework" (Morse 52). If science should find its way into informing and shaping legal decisions, it cannot be submitted in its unadulterated form, it must be doctored to accommodate a more philosophical conception before it can be implemented.[7]

At present, there is simply not the technology or validated evidence to support causal claims of the brain, mental states and behavior and therefore there is little relevant information available, let alone to be used as sound evidence. It is suggested that neuroscientific evidence and technology should not even be permissible in court due to the physical limitations of the available technology, for it is not a flawless measure and has obvious flaws and errors that occur (Morse 61). It may be possible in the future to permit such data as research techniques and technologies will continue to improve have the capabilities to account for these present discrepancies, therefore providing a more comprehensive view of the brain and neuronal activities (Morse 61-62).

Neuroscience appears to reduce conscious, rational agents to pure mechanisms, eradicating any sense of humanness and degrading our sense of

7. Morse notes how it is practically used, not in a complex, intricate sense, but rather in the legal system or conversations surrounding criminal law, free will is often implemented loosely in lieu of agent responsibility, which can lead to misunderstanding (Morse 55). The problem of free will is an issue not to be handled in the court of law.

human nature, which is a serious concern and consequence of subscribing only to scientific data, particularly if one were to believe the consequences of the Libet experiments (Morse 70).[8] Human beings are not machines and I reject the view we are all at the will of our brains and unable to think, behave or act differently than what has been determined by our neuronal connections. There are clear influences that shape our behaviors beyond personal control, but there has to be a sense of the person and humanity that prevails through the external and internal forces pulling one to think and act in certain ways. Morse raises a rational and clear point that, at present, it does not appear that neuroscience data should hold too much weight in the court of law. At present, there is not the capability to make the causal claims that are speculative assumptions made by those who are presented the data and disregard the limiting factors/relevant evidence.

Freedom comes into question, greatly due to the notion that one can be truly free to make decisions despite pressing internal factors. Even if these factors influence and determine one's thoughts and behaviors, they do not automatically eradicate a genuine notion of free choice and responsibility. For instance, it is difficult to conceptualize a sense of freedom in decision-making when discussing those trapped in a low socioeconomic status, for many choices that would be beneficial are not accessible. Due to the barriers set in place by society, those who may consciously want to act freely may not have the ability to do so. Morse addresses this issue in relation to internal, psychological constraints by discussing the human tendency of compulsion, claiming that the law takes them into consideration while noting that "internal compulsion are difficult to conceptualize" (Morse 54). He concludes that it may be favorable to consider freedom in the light of responsibility as the ability to freely engage in higher order intelligent processes (rationalizing, reasoning, thinking, etc), an ability that no brain scan is sufficient to reveal. Other essential factors include past and present behavior…

A popular objection to Morse is that the brain is a complex organ, a mystifying enigma that has capabilities and connections beyond our current ability to map or measure, that should not be discredited as a tool for guiding and shaping the law. While it is pertinent to consider the empirical measurements of brain activity, particularly if employed to garner insight on the well-being of an individual, it is not a sound philosophical and legal decision to utilize this data to solve metaphysical issues or reform the legal system, for neuroscience does not have a place in doing

8. Refer to Footnote 5 for in depth explanation of the Libet Experiments.

so. At best, neuroscience may assist in understanding the proper way to apply scientific data when considering how to modernize and update the law, but it cannot at present be employed to explain human rationalization and behaviors, which is how it appears to have been interpreted and promoted through realms beyond the scientific community.

Morse provides a voice of clarity amongst the clatter of the misinformed that seems to have taken a stance at the center of society and criminal law, perpetuating the erroneous notion that agency, consciousness, behaviors, etc. can be reduced to neurobiological processes. Human beings are not machines following pre-wired programming; we have thoughts, intentions, desires, passions, beliefs, dreams, habits, attitudes, behaviors, and so on, that shape how we perceive the world around us and interact with it and others.[9] The perilous assumptions neuroscience has implemented that have skewed these notions towards a more mechanistic view on human behaviors threaten the core of our metaphysical conceptions and notions. This is not to say it must be eradicated altogether, rather there must be a way that Neuroscience, Philosophy and the Law can coexist and inform one another without breaching the concepts integral to each discipline and considering the person involved.

SECTION 5: A PRACTICAL IMPLICATION OF A METAPHYSICAL ISSUE

If the metaphysical conceptions of agency, responsibility freedom are to be applied practically, they can be framed in the manner of understanding the skewed manner in which society tends to approach these concepts. A major consideration in the implementation of neuroscience data and proposed courses of future action concerning the spread of neuroscience, is calling into question how that would practically be implemented when such technology is inaccessible to a vast majority of the population. This practical and political consideration presents yet another reason to be cautious about the use of brain scans in legal contexts.

Discrimination by class is evident throughout all reaches within society, and is especially prevalent in the court of law. Disparity arises from a socioeconomic standpoint, for neuroscientists suggest that potential menaces to society be screened and preventative steps be taken to ensure criminal behavior does not

9. It must be noted while mechanistic reductionism is not being promoted, neither is dualism, for while human beings are not simply machines, our biological processes operate on a mechanistic measure and are essential to how human beings function.

ensue. This is not a possibility for the 46.7 million living in poverty battling mental and physical disabilities with no access to such treatment, hence illuminating the impracticality of following a purely neuroscientific (US Census Bureau 2014) . This creates a significant divide for those living in poverty who are more likely to have an abnormality/disorder influencing their behavior, but do not have access to preventative care or treatment, as the first and foremost reason individuals do not seek care is the inability to afford the cost (Kaiser Family Foundation 2009).

These statistics may be a quantitative measure of a comprehensive overview of the low socioeconomic status population, but they speak to larger metaphysical issues at hand. The discrepancies present in the significant amount of the population suffering from illnesses and disorders that are barred from healthcare access illuminate the greater societal issue of blatant discrimination towards those suffering in poverty. This impedes how we conceptualize the self, personhood, and agency if we consider those who are struggling in a low SES situation to not be as worthy as those who have access to such care. If brain scans are used to establish innocence and low SES defendants do not have access to them, low SES defendants more often will be found guilty and incarcerated, further exacerbating already existing inequalities.

The inequality is then providing a skewed picture of how neuroscience evidence should be promoted in the legal system if only the affluent are able to access it and receive treatment, for how can those who are unable to be diagnosed and receive care be held accountable for negligence in measures to prevent criminal behavior? If neuroscience data is going to continue to be utilized, particularly as a diagnostic measure as well, it must be made accessible to all individuals in society regardless of their economic status.[10] An additional reason to exercise restraint, then, is that access is not equitable.

SECTION 6: WHERE DO WE GO FROM HERE?

It is evident that the root cause of confusion and escalation of neurodata entrenching itself in criminal law is the misguided blind faith in incompatibilism, which encompasses the extremes of hard determinism and dualism alike. In

10. Eagleman proposes that neuroscience be utilized in order to screen for potential criminals and indoctrinate them into rehabilitative programs as a preventative measure before crimes are actually committed. This raises grave concerns regarding freedom and personhood, but if this viewpoint were to be propagated, then persons from all backgrounds must have access to such technology and care.

order to correct the error of our collective ways, it is of the utmost importance to recognize and acknowledge these incompatibilist notions and act swiftly to reject them and replace them with compatibilist views, particularly those outlined by Morse. By reshaping the way empirical data is approached in the context of criminal law while taking philosophical notions into consideration, the tension that has been created can dissipate as we move towards a more harmonious and informed society and court of law that considers the person that is being evaluated for their brain activity and their actions. Compatibilism provides a solution to the practical issue at hand, for it is an equitable approach regardless of socioeconomic status, race, gender, religion, and so on. If neuroscientific data is to consider the person, then it must be accessible to those regardless of background or ability to access care.

Neuroscientists are also adamant about promoting Neurotechnology to craft preventative treatment programs, but such a task is irresponsible if those who cannot afford care for even diagnostic purposes do not have access, thus creating a divisive line between the higher and lower socioeconomic classes. When some individuals have access over others, some agents are considered of more importance than others, which subsequently contributes to a deeper, metaphysical inequity, as well as shaping the legal system to be set upon a premise of inequality. Philosophical conceptions are a practical way to assist in informing the legal system on how to approach science and personhood in a way that allows for ethical and humane treatment of all persons regardless of their background.

In in the interest of protecting the agency of individuals, it does not seem sufficient at this point in time to present Neuroscientific data as evidence in criminal law, for the intention of doing so would be to demonstrate how the abnormality evident in the brain can fully and deeply explain the roots, intentions, and enactment of human behavior. While it is possible the day may arrive where technology has the capability to peer into one's consciousness, there is currently no such measurement that has the capacity to map one's intentions, desires, behaviors, etc. Despite the impressive reputation Neuroscience has incurred, it should be approached cautiously and at this point in time. Until the time has arrived where technology is capable of displaying causal relationships between brain activity and behavior, it should not be implemented as evidence in the court of law, for it attempts to explain conscious motives, intentions, causes,

and behaviors that simply cannot be reduced or elucidated by neurobiological processes.

It is far from a dismal outlook for the future of neuroscience informing legal decisions, for both sides of the argument agree upon the optimistic outlook as technology and society rapidly evolves and shifts perceptions and understandings concerning the influence of science and how it can effectively mingle alongside philosophy and the law. Technology is constantly improving as neuroscientists garner greater insight into more proper, effective methods for incurring evidence, it can reach a point where it may be a crucial part of the evidence process in court cases. Until that day arrives, action must be taken immediately to repair the damage of misinformed use of empirical data as evidence in order to properly employ modern technology when determining the punishment and future of human beings.

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compos mentis

Validating Knowledge of Individuals with Mental Disorders: An Extension of Plantinga's Functionalist-Theory of Knowledge

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ABSTRACT
Alvin Plantinga's Functionalist-Theory of Knowledge proposes three qualifications necessary to obtain and defend warranted belief or knowledge. The author of the present paper has applied Plantinga's qualifiers to address the validity of knowledge of individuals with varying mental disorders in attempt to dignify such states of knowledge for axiological development in the field. Specific cases of autism spectrum disorders have been provided to exemplify Plantinga's qualifiers, and multiple past theories and experimental sources have been implemented and applied to further support the proposed alternatives. The comprehensive purpose of the theory extension within the paper was to present a paradigm shift in society's view of individuals with mental diagnoses to look beyond cognitive atypical function instead as alternative function – disability to different ability.

KEYWORDS
Justified True Belief, Knowledge, Cognitive, Function, Design Plan, Neurotypical, Disorder, Disability, Dysfunction, Autism

INTRODUCTION

In Alvin Plantinga's book Warrant and Proper Function (Plantinga 1993), Plantinga proposes an alternative to Edmund Gettier's abandoned Justified True Belief Theory of Knowledge (Gettier 1963). Plantinga identifies his Functionalist-Theory of Knowledge as one that warrants knowledge based on the recognition of three criteria: the individual's cognitive faculties to be functioning properly, the individual working according to his or her design plan, and finally, the individual's knowledge having been obtained in an environment that aligns with his or her design plan (Plantinga 1993). Throughout the first chapter of his book, Plantinga acknowledges that one's knowledge does not have to be typical of a human being in order to be considered warranted. He demonstrates this point through examples of individuals who have extraordinary cognitive capacities in the way they are exceptionally gifted; however, it is my belief that individuals who have various mental diagnoses can also obtain warranted belief – or knowledge. It is my hope that the reader will generalize the concepts provided in this paper, understand how they exhibit the point of virtue, and apply the principle of warranted knowledge to the greater population of individuals with many varying mental capacities.

Before advancing further, I find it pertinent to mention two points to the reader. One, the human mind is fickle and subjective; therefore, a spectrum exists for all abilities. Consequently, many statements in this paper will have exceptions and qualifications, but the proposal and its qualifiers are for the general population of people with disabilities (including various cognitive impairments and developmental disorders). Two, I wish to qualify the language of "disorder" to instead reframe a mental diagnosis as a "different order." An individual with a diagnosis can be labelled as having a disability or a different ability, and I reside in the axiological camp of the latter. With a different ability comes a different worldview and a different set of skills. I do believe this is by matter of design. However, for matters of simplicity throughout this writing, I will continue this paper with the medical language of mental disorder – just be cautious of the word's intent.

In this case again, one does not have to be neurotypical or beyond to be considered as having knowledge. As long as the individual can claim Plantinga's three knowledge qualifiers, typical neurological faculty [and this is key] is not required to have warranted knowledge. Through interpretation and application

of Plantinga's Functionalist-Theory of Knowledge, individuals with mental disorders – though functioning differently from what is expected or normal for the neurotypical human being – qualify as having knowledge by the fulfillment of Plantinga's proposed conditions. This knowledge will be demonstrated through a variety of examples in recognizing and qualifying multiple types of knowledge and how they have been obtained.

APPLYING PLANTINGA'S THEORY OF WARRANT TO INDIVIDUALS WITH MENTAL DISORDERS

In order to qualify the knowledge of individuals with mental disorders as having warranted knowledge per Plantinga's Functionalist-Theory of Knowledge, individuals with mental disorders must meet all three premises of warranted knowledge. Each qualifier of warranted knowledge will be addressed and applied to the population of individuals with mental disorders in the following.

Qualifier One: Proper Function

Plantinga's first warrant qualifier is the assumption that one with knowledge must have properly functioning faculties. I propose the cognitive faculties of individuals with mental disorders to be functioning properly and sufficiently for them to obtain various, multidisciplinary sorts of knowledge (much of which these individuals share with their neurotypical peers), despite initial appearances to the contrary. For instance, take the example of Temple Grandin: as a renowned animal behaviorist, animal rights advocate, a professor of animal science, and an author, Grandin – despite her diagnosis of autism – can be concluded to have proper function. Grandin's diagnosis of autism and cognitive functioning in correspondence resulted in a perspective type of knowledge neurotypical individuals did not have; consequently, Grandin was able to prompt reform in agriculture by viewing the system from a point of view neurotypical agents had not considered. Alan Snyder, a researcher in the field of psychology, believes the creativity and problem-solving skills accessed by savants (a diagnosis on the autism spectrum) are present but normally hidden from one's conscience (Goldstein 2015). Therefore, with this perspective of a brain affected by autism (but in many other cases with varying mental diagnoses, as well), the different mental order of an individual with autism just results in different functioning, not necessarily

dysfunction. The preceding example and explanation exhibits individuals with mental disorders to have knowledge in a warranted and unique manner.

Additionally, one of the defining symptoms of an autism spectrum disorder (ASD) diagnosis is the lack of an understanding or a difficulty presented within social situations. This social component is one of the easier-to-identify symptoms within a person who has autism and surfaces often in the deficit of one's emotional comprehension of others. However, many with ASD, including Temple Grandin, have configured and developed alternative routes to interact socially. Bruce Hood, an experimental psychologist, refers to this deficit of social understanding as "mental blindness" in his theory of the mind (Hood). Hood defines his concept of mental blindness as the process when one "can't understand that someone has a different perspective." In this way, while the blindness may result in one with a disability from seeing another's perspective, his different ability may yield compensation in another form. For example, as Hood identified present in Grandin, some individuals with ASD are still able to respond to the emotion of others based on explicit, deductive reasoning that concludes the resulting behaviors from an understanding and replication of similar past experiences. This mental blindness could be counteracted by a posteriori knowledge, which deducts probable causes through the examination of experience. While, to a neurotypical person, such a roundabout deductive process may be time-consuming or seem to require a more complex cognitive faulty, an inability to process does not typically conclude improper functioning – just a different way of functioning to arrive at congruent social information, i.e. "I can see that person is happy." Such a system proposed by Hood is merely an alternative option for the atypical mind. Proper function rests on more than social finesse.

In addition to combatting mental blindness, the somatic-marker hypothesis, as proposed by Naqvi, Shiv, and Bechara (2006) can be applied to cases of mental disability and yield to be fruitful. The somatic-marker hypothesis recognizes a feedback loop between the emotional regulating amygdala and the logic-centered pre-frontal cortex to complete personal decision-making tasks. Naqvi et al. describes the neurobiological theory to state "that such decisions are aided by emotions in the form of bodily states, that are elicited during the deliberation of future consequences and that mark different options for behavior as being advantageous or disadvantageous" (2006, 260). This overcoming of mental blindness and proper application of the somatic-marker hypothesis can be used to

display that people who have ASD or developmental diagnoses of the like can still function on a daily basis. These individuals just arrive at an end point differently from their neurotypical peers. This adapted operational system, however, does not deduce improper function – simply different routing. Dysfunction (different function) does not automatically yield reason to eliminate all knowledge of the relevant category. Therefore, use of the somatic-marker hypothesis does not conclude improper functioning and can support the first qualifier of warranted knowledge.

Furthermore, some other types of disorders are fundamentally cognitive (for example, Down's syndrome); however, much of a person's social interaction with others is a kind of interpersonal knowledge that isn't cognitively based but is instead experiential (Stump, 2010). In this way, through experiential knowledge, these individuals, too, can obtain areas of knowledge (i.e. reading the moods of others experientially). Experiential knowledge represents the opposite of mental blindness and can counteract arguments of dysfunction.

Qualifier Two: Design Plan

Second, individuals with mental disorders function according to their design plan (which also has to be reasonably reliable for leading the individual to true beliefs and will be addressed to come) – by means of the note at the beginning of this paper regarding different order and ability. Plantinga originally identified the design plan of humans in his work Warrant and Proper Function as a necessary notion for knowledge (1993). He portrays the design plan as a blueprint of proper function – the purpose or intent of the individual. Plantinga proposes the design plan to be "highly responsive to circumstances," therefore attributing to the individuality of each person's plan (Plantinga 1993, 14-15). It should additionally be acknowledged that not all design plans are typical nor do design plans have a master plan they all attend to. Each design plan is individualized to the specific person and his or her grander purpose. Therefore, if a design plan does not include cognitive extraordinariness, or even typical skills, that does not mean the individual of that design plan is not functioning according to her plan. As each person has different abilities, various tradeoffs will exist within each plan.

In continuing with the recognition of individual design plans, the design plan must also be reliable, which has been implicitly covered already. People with disabilities possess better-than-typical design for some sorts of knowledge

(as expressed in Temple Grandin, those with savant syndrome, or any person with a differing mental function that allows him to view the world in a new way). These individuals consequently have adequately reliable knowledge for certain compensatory routes to knowledge, as well, and their less-than-ideal design for other sorts of information may nevertheless allow for appropriate limited knowledge. In understanding a functioning limited knowledge set, the analogy could be to a person who is colorblind. The colorblind person whose vision is nonetheless good enough to give plenty of reliable visual information about one's surroundings and worldview is justified yet has nothing to do with color; this person's eyes are reliable but founded upon a different mechanism of obtaining the information. If the design plan is reliable, function can be derived through multiple routes; as long as the used routes are in accordance with one's specific design plan, he is justifiably functioning within his design plan properly.

Qualifier Three: Environment Alignment

It has already been indicated how people with mental disorders function properly, and just as they acquire their knowledge here on earth in social or other situations, it is done as neurotypical people do with similar results. If the environment is right in one case, no reason exists to doubt that proper environment in another case.

CONCLUSION

Individuals who have mental disorders are often looked down upon by society as not being able to obtain validated knowledge. However, it has just been stated that such individuals have warrant of knowledge based on Alvin Plantinga's Functionalist-Theory of Knowledge, for individuals with mental disorders have properly functioning cognitive faculties, work in accordance to their own design plans, and operate in environments that align with their design plans. Regardless of cognitive ability, though, the dignity of an individual should not be brought into question by another unworthy human, or so I would claim – having experiential knowledge of "disabled" persons from years of close interaction and relationships in my field of work. This however, is really the topic of another paper, so for now, I let it rest. Yet again, it is my hope to have the reader apply the concepts presented in this paper universally in regards to the knowledge of people with mental

disorders. Though one may obtain it differently, individuals with mental disorders can have warranted knowledge and belief, nonetheless.

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compos mentis

A Re-Invention of Love

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ABSTRACT
With the maturation of the field of neuroscience and discovery of new methods to explore the deepest corners of our psyche we are confronted with many questions never before imagined. In particular, love has currently come under the scrutinizing lenses of fMRI machines and EEGs to properly track its expression in the brain. In theory, like any other biochemical pathway, knowledge of love's associated pathways would allow one to physical intervene on the part of love: either elating the sensation or disrupting it entirely. More than a hypothetical, however, the long mythical 'love potions' and anti-love drugs are already in development and are now demanding of us to consider the nature of love and our subsequent role in crafting it. Brian D. Earp and colleagues, taking center stage on the discussion and optimistic of our role in crafting love, have already begun establishing the promises and possible ethical guidelines for the use of said drugs. Though his last criteria of 'necessity,' requiring one to exhaust every other non-pharmaceutical mean before taking the drug, has recently been scrutinized and even Earp considers this possibly sets the bar too high for the use of these drugs. As I will argue, the generalized use of this technology, as will be allowed with the removal of the 'necessity' requirement, would risk more than one would gain. This is because love is more than just a one-dimensional emotion, but rather a more complex human experience deeply intertwined with who we are. Moreover, to unnecessarily medicate the sensation would ignore personal and societal causes to ones distress and would further disempower us from dealing with our own perceptions of love. This is not to say, however, that this new perspective on the influences of love is not beneficial. Rather I believe demystifying the experience of love could serve in crafting in us better-equipped lovers. While an exciting avenue, we must distinguish between proper care and over-medicalization lest the disenfranchisement of ourselves from our emotions leaves us more confused than when we began.

KEYWORDS
Anti-Love Drug, Neuro-Enhancement, Love, Medicalization, Commercialization, Safety

I. INTRODUCTION

Rick Sanchez, the fictitious crazed scientist in the animated series *Rick and Morty*, once inquired to his grandson Morty, "Does evil exist and, if so, can one detect and measure it?" Such a wide-ranging question, it would demand reflection on the nature of evil, the role humans on earth, and the extent of human knowledge. Quickly shut down however, Rick continues, "Rhetorical question Morty, the answer's yes; [burping] you just have to be a genius" ("Something Ricked This Way Comes"). Time and time again, the progression of science has forced the reinvention of our worldview, and even our most foundational beliefs and ideals can fall from grace. Though this is nothing new, stretching back to the era of the Enlightenment and beginnings of the Scientific Revolution where the words of the existentialist philosopher Nietzsche could not have rung more true, "God is dead … and we have killed him." A seemingly mad idea, but the nuanced quote from *Parable of a Madman* can be best understood as how after the Enlightenment and Scientific Revolution God, once the centerpiece of a fulfilling life, took a diminished role in our daily lives. Before us stands a similar crisis: the maturation of the field of neuroscience. As we begin to explore the nature of our own being we similarly find ideals such as personhood, freedom of will, and consciousness called into question.

In particular, the nature of love has recently come under the scrutinizing lens of neurobiology. Love, as conceived by multiple neurobiological studies, is now deemed to be no more than a pattern of associated neurochemicals and hormones (Fisher, Aron, and Brown 2005). In a passion to better understand our world, science has seemingly robbed it of its mystery and beauty. Agreeably, the idea of neuroscientists carting off love sick and heartbroken individuals into MRI machines (magnetic resonance imaging used to track blood flow in the brain) to map out the expression of emotions in the brain seems deeply unromantic. However, to better understand love's neurobiological influences has the ability to create in us more knowledgeable, and therefore better-equipped, lovers. Like Nietzsche, who strove to exhibit the origins and therefore demystify concepts such as good and evil, neuroscience is similarly reorienting our perspectives on love by exposing its physical underpinnings. Though, unlike Nietzsche, neuroscience equips us further with a much more powerful tool: physical intervention. As we learn more about the associated pathways and neurochemicals of love, intervention becomes a more tangible reality and a readily available tool to grapple with the highs and lows of

love. According to the latest issues of *Nature,* the long-mythical pharmaceutical 'love potions' and anti-love drugs are in the making (Young 2009). This raises a number of questions: first, is love ultimately reducible to neurochemistry? Second, would it be desirable to use chemical interventions to support or undermine love? And lastly, with this newly found perspective of love, what is left of our prior conceptions and idealizations of it?

Brian D. Earp and his colleagues, committed to the role that neuroenhancements could take in relationships, have already published multiple papers outlining the promises and ethics of anti-love drug technology, or as he states it a 'chemical breakup.' Making the case for anti-love drugs, described as "any substance that works to block or diminish a feeling of love, lust, attraction or attachment," Earp speaks on certain 'perilous loves' that would be beneficial to disrupt (Earp 2013). Perilous loves may include an unrequited love that arouses thoughts of despair or suicide, incestuous love, pedophilia, and so on. The most persuasive example was for those who were tied down to abusive relationships and could not compel themselves to leave (Earp 2017). New findings in neuroscience are now suggesting that this is due in part to the fact that the same pathways responsible for the sensations of love are the that go awry in addiction (Zeki 2007). Clearly, there are certain manifestations of love that are not healthy, and it would serve us all well to curb these forms of love. As such, the idea of positive intervention to suppress love is a promising and exciting avenue.

However, those advocating for the more general use of these drugs make the all too common mistake of neuro-realism. Coined by bioethicist Eric Racine, neuro-realism, used to describe neuroscience in the popular media, is the tendency to over exaggerate the qualifications of a particular research (Racine 2006). To do so is understandable, especially when pertaining to neuroscience, because the findings are both incredibly interesting and far-reaching: one need not go further than the science tab of a news site to find stories reading 'Neuroscience Proves Free Will Doesn't Exit!' and 'Dawn of the Super Soldier in the Era of Neuroscience.' However, to do so ignores both the limitations of the findings as well as the grander social and ethical effects. Herein lies a few considerations to hesitate popping a pill after your most recent heartbreak. In particular, the shift towards medicalization of an otherwise normal human experience and subsequent commercialization of love should raise concern. As I will argue, while society as a whole could benefit from the demystification of love and individualized positive interventions, a more

generalized use of therapy does so with a serious misunderstanding of the nature of love.

II. NEUROBIOLOGICAL FOUNDATIONS OF LOVE

a. 'Your Love is My Drug'

In order to best tackle the neurochemistry of love and the ethics of love drugs, a bit of background on current findings is necessary. From the perspective of the brain, love is, "a complex neurobiological phenomenon" deeply rooted within the, "trust, belief, pleasure, and reward activities within the brain," which constitute the limbic processes (Esch and Stefano 2005, 175). Evolving from our ancient ancestors' reproductive needs, love's ability to bring and keep human beings together has played a key role in maintaining the species (Earp 2017). It is important to note that this is not limited to sexual desire and/or possessiveness, but also encompasses a deep desire for intimacy. Moreover, a "craving for emotional union supersedes the need for sexual contact" (Fisher, Aron, and Brown 2005, 494). This can otherwise be defined as 'romantic love.' This system of adult bonding seems to have its roots from early structures involved with mother-infant bonding. As higher order functioning came about, this system was only reinforced and selected for, as greater paternal investment was needed to care for offspring with increasingly large and complex cerebellum, who, in turn, required greater attention and protection in the early stages of life (Young 2009).

Underlying human love, then, is a set of basic brain systems for lust, attraction, and attachment (Fisher, Aron, and Brown 2005, 494; Earp 2017). As proposed by Helen Fisher and her colleagues, attraction enables and motivates individuals to seek out a range of mating partners; attraction motivates individuals to focus their efforts on a specific partner i.e. partner preference; and the attachment system ensures both parents stay together long enough to fulfill their parental duties (Fisher, Aron, and Brown 2005, 494). These three systems, though interrelated, are distinct enough to where neurologists can distinguish say romantic love from lust via their distinctive neurochemical patterns and pathways.

To see how these ancient systems manifest themselves, one need not look further than the countless amounts of novels, songs, and poems given to the subject of love. Writing to the all-encompassing feeling, Nizar Qabbani writes:

Arbid

I hadn't told them about you,

But they say you in my eyes.

I hadn't told them about you,

But they saw you in my written words.

The perfume of love cannot be concealed

As such, the sensation of love is all consuming and, in many cases, literally addicting. The areas of the brain activated in response to romantic feelings are largely co-extensive with regions high in concentrations of neuro-modulators associated with reward and desire as well as addiction and euphoric states, namely dopamine. These same regions become active when exogenous opioid drugs like cocaine are ingested (Zeki 2007). Further research suggest people in love are similar to individuals suffering from Obsessive Compulsive Disorder – not only mimicking their obsessive thinking and compulsive behavior but also paralleling certain physiological cues such as low levels of the neurotransmitter serotonin in the blood (Marazziti, Akiskal, Rossi, Cassano 1999). As such, romantic love is in many ways involuntary and difficult to control, altering the reward system to drive goal directed behaviors (Fisher, Aron, and Brown 2005, 494).

b. What the Science Actually Tells Us

While studies, such as those discussed above, are beginning to crack the underpinnings of love, their associated limitations should be considered. By probing the neurochemical foundations of love the prospects of active intervention are becoming much more likely. Indeed Earp is optimistic that as techniques in neuroimaging, neurobiology, brain modeling, and drug delivery continue to advance we may find ourselves with an array of love-diminishing interventions able to counter problematic passions (Earp 2017). The excitement of learning the underpinnings of love is real (take for example Brain Harp and his "Emotional Arcade" where contestants compete to see who can feel a certain emotion the hardest as tracked by an EEG headset). However, it is important to understand what we are actually uncovering and how they should be interpreted. While I cannot go fully into these criticisms, I will quickly outline them for the sake of future

arguments: particularly the ill found interpretation of love as a sort of 'recipe' of neurochemicals.

For one, Earp's optimisms for anti-love drug therapies operate under the assumption of love as analogous to its associated neurochemicals. This is because the neurochemicals we observe, while generating some distinctive patterns in our brain, are not operating in a vacuum. Take for example a famous study done on prairie voles – often used to study human mating because they are known for "coupling up into life-long pair bonds, for sharing parental roles, and egalitarian nest building" – to explore the role of oxytocin and vasopressin in modulating attachment and bonding behaviors (Mallet). It was found that introducing oxytocin antagonists caused the otherwise committed partners to split up and look for other mates. Similarly, a more promiscuous species of voles would form life-long pairs after the addition of oxytocin (Liu and Wang 2003; Cho, DeVries, Williams, Carter 1999). While an oversimplification, oxytocin was deemed the 'bonding chemical.' Additional research has shown to confirm these results, but it is usually overlooked that the voles were not simply injected with oxytocin or oxytocin antagonists, but rather required six hours of cohabitation with other voles. As Mohamed Kabbaj, a neuroscientist at Florida State University in Tallahassee, told *Nature*, "The drug by itself won't do all these molecular changes—you need the context: It's the drug plus the six hours of cohabitation" (Wang, Duclot, Yan, Wang, and Kabbaj 2013). Scientist later pointed to an epigenetic system, a control of genetic expression, to explain the results. While dependent on neurochemicals, the expression and development of love cannot be reduced to said chemicals. Rather, love is a complex phenomenon that involves multiple chemical, biological, and sociological factors.

Skepticism runs even deeper with many believing a specific recipe for love could never be found. The biggest reason being that we all have different chemical starting points and what could be considered my love drug could be your hate drug (Mallett). Also, we should be wary of the reductivist argument that explains love as a combination of certain neurochemicals. As put by Larry Young, a professor in the Department of Psychiatry at Emory University, "It would be impossible to make a drug that would block a specific bond because there is no single molecule that is involved in love, per se," he says, "I think you have to think of chemistry in combination with connectivity." Being such an intense emotion and deeply intertwined with other regions of our brain such as those concerning

memories, love cannot be disrupted by simply altering the chemistry. While we have intervened on behalf of the neurochemistry, the overall neural circuitry that our particular love stories have woven would not be affected (Szalavitz).

III. THE PROMISES OF INTERVENTION AND LIMITS AS PROPOSED BY EARP

Thus far, I have shown you that love is not reducible to its neurochemical underpinnings as Earp might hope. However it is clear that love can be affected by chemical interventions and as drug therapies that affect relationships are already in development, we need to grapple with whether we *ought* to chemically intervene with love processes. Take for example the ideal case for intervention as laid out by Earp and his colleagues of a mother trapped in a physically and verbally abusive relationship (Earp 2013). While objectively realizing leaving is both best for herself and her children, she always believes in her husband when he swears his eternal love for her and promises to stop. Understanding the intense and strong feelings that tie her down, would it not be morally permissible, so long as she was not coerced, to take a pill that alleviates her from said emotions? Earp would think so and follows through by laying down the guidelines to expand on when it may be appropriate for such a chemical break up: 1) The love in question is clearly harmful and needs to dissolve one way or another, 2) The person would conceivably want to use the technology—and if he or she did want it, there would be no problematic violations of consent, and 3) The technology would help the person follow his or her higher order goals instead of his or her lower order feelings. As it is understood, an individual who fulfilled these requirements would have pursued the drug for the right reasons, is operating of their own free will, and, instead of being driven by one's emotions, would be acting on their sense of reason. However, the strongest moral justification for undergoing the use of love intervening drugs would be, 4) It might not be psychologically possible to overcome the perilous feelings without the help of anti-love biotechnology. This requirement has been the most scrutinized by bioliberals, those advocating for the more general use of cognitive enhancement, as 'setting the bar too high.' However it is here many begin to ignore the grander societal consequences of such an intervention in favor of immediate results. As I will argue, it is this requirement that prevents the harmful effects that can be associated with the generalization of such technologies.

IV. DANGERS OF GENERALIZED USE AND WHY THE FOURTH CRITERIA SHOULD BE RESPECTED

a. Nature of Love

Medicalization is a termed coined by sociologist to define the process, "by which 'non-medical' (or 'life' or 'human') problems become understood and treated as 'medical' problems" (Conrad 2007). The notion in itself is meant to be neutral and in his paper *On Good and Bad Forms of Medicalization* Erik Parens states, "as tempting as it is to lie down and rest with our favorite insight, we need to gather the energy to have a conversation about the difference between good and bad forms of medicalization." While many of the promises and ideal cases for love drug interventions have been explored, it is necessary to reflect on the limitation of said interventions as most properly reflected in Earp's fourth criteria of necessity.

As explained above, love is a powerful force whose symptoms such as obsessive and consuming thoughts can have an incredibly debilitating effect on an individual's life. Consider then the temptation to use these interventions when love is most powerful: first love as a teenager. While it is not necessary to intervene in such cases, one could still argue a case for an individual's well being: the incredibly consuming nature of love is a distraction and an unnecessary source of potential suffering, and so it should be disrupted if wished. Take for example then a teenager, we'll call him Bob, who has recently fallen in love, but considers his thoughts on his newfound love to be excessive and distracting from other areas of his life such as academics, sports, etc. If, say, his beloved had also rejected him it would only exasperate the situation. Not being coerced into the decision by a parent, he desires to intervene, and, in doing so, follows a 'higher order goal' (academic or athletic success) rather than maintaining his love, a 'lower order feelings' driven by the prospects of reproductive success more so than anything else. The case fulfilling Earp's first three criteria, it would then seem appropriate to follow through with the intervention. However, drugging an otherwise normal human experience, especially one as critical as a first love, misunderstands the nature of the experience.

Love, as in Bob's case, is more than just an emotion or drive to compel animals to breed, and rather serves a more holistic goal in the life of an individual. Many 'self-shaping' enthusiasts and bioliberals miss this point by reasoning

that enhancements, such as love interventions, reach the same end as non-pharmaceutical means, getting over our obsessive or painful love, but do so more efficiently. They consider that if both conventional and pharmaceuticals methods are simply aiming at a change in neural circuitry then it would be illogical to not pursue the easier method to do so. In response, one must make the distinction between properly integrating an experience and simply blunting an emotion. Whilst both end up moving on – as reflected in the neural chemistry of romantic love's associated pathways more or less inactivated – I would not consider them equal. One important reason, as such, is the context this love was overcome, which aims to morph brain physiology in its entirety when engaged as opposed to knocking out a step in a biochemical or neurological pathway (as was the case in the vole experiment in the prior section). For Bob to engage his emotions enables a much grander effect on his psyche than simply moving on. In many ways it crafts his definition of love for future reference. To lose this would be a hit to our future emotional health. As commented on by Dr. Niloo Dardashti, an adult and couples therapist in New York, to reflect on our first love reminds us how, "surprised and open and receptive" we can be and encourages us to engage this behavior in future relationships. In particular she emphasizes the strength of the emotions associated with a first love to be particularly important in said reflection (LaFata). Similarly the beauty of love is in its ability to show us the world through, "the point of view of difference" as opposed to one of self-interest and to feel conflicted when confronted as such is to be expected (Badiou 56). Its an important challenge, however, forcing us to consider the feelings of the other, but instead one only reaffirms a narcissistic world view by simply blunting their emotions and walking away. What a reasonable individual may then define as an inconvenience, whose disruption would be an opportunity for growth via 'self-shaping,' as Bob had, would in fact undermine a critical opportunity to do so. The experience of love is multi-dimensional, interconnected to memories and powerful emotions, but under the lens of medicalization it tends to be reduced to either a pleasantry to uphold or suffering to cure. This view of love only considers its immediate effects whilst ignoring the grander role it plays in developing our emotional and social health.

Another concern of medicalization is that its narrow focus on an individual's biology is incredibly disempowering, contrary to the opinion of many bioliberals. To use the language of Parens, to medicalize heartbreak we are under the

impression of ourselves as *objects*, at the will of neurobiology, rather than *subjects*, with a freedom to choose and to be reasoned with (Parens 2011). While our particular neurochemical patterns are correlated to ourselves, they are by no means a one to one cause of our individual behaviors and tendencies. In fact, to rewire the emotion medically largely ignores both the societal influences and personal tendencies, which led to emotional distress. Consider again Bob, the overly excitable teenage lover. What if his distress is due to a particular attraction to women who are cold and belittling? While it may seem strange it is important to note that we are not free to love just anyone, but rather form strong psychological types from early childhood. This is because what we are looking for in love is not necessarily someone who is pure or kind, but rather someone who is familiar ("Who We Can Love"). If Bob's first 'loving relationship' was with a distant and cold mother then it may not be unlikely that Bob would attempt to emulate this love on the basis of familiarity, especially as he is first engaging romantic love. Such love maps are already difficult to tease out, but now consider the effect of love drug interventions that work to alleviate the negative outcomes without addressing the distorted perception: in short, our goals in love become even harder to realize. While these interventions can divert our attention away from specific individuals, they cannot probe these distorted perspectives as a whole. If we make no attempt to reason the gap between what we thought we wanted and the negative outcome in favor of medicating an emotion then we risk our emotional health and ability to expand our notions of love. This is because to medicate would be to concede to the notion that our emotions cannot be influenced, reasoned, or reflected upon, but, at best, only redirected. As I argue, while love in its immediacy may seem to warrant an external intervention, we risk losing much more than we hope to gain. In fact, what we gain seems to be little more than a short-lived sense of comfort in exchange for our overall sense of emotional and social health, and our autonomy.

b. Commercialization of Love

Further, it must be considered whether or not we as a society are comfortable with equating human emotions such as love to any other commodity in the grander economy. This is in itself an extension of medicalization. As explained by Parens, medical science has an incredibly narrow view of health whilst determining any sort of variation as pathological. However, to treat human problems in this way undermines its complexity and the varied manifestations that should be affirmed,

not homogenized. However, retailers and drug companies, who could soon provide love drugs ideal in crafting your 'perfect love,' are keen to exploit certain ideals for profit. While haphazard, items such as oxytocin nasal sprays already exit and can be bought on sites such as amazon promising to elevate feelings trust and empathy, and receptiveness to social cues. By approaching love in this way and further commodifying the experience works to stress a particular ideal of love instead of appreciating its multiplicity. Earp directly comments on this by describing certain contentious cases such as the fear of medicating homosexual love, inter-caste love, and (until recently) interracial love. Any attempt at subduing such experiences can be considered misguided, especially when inflicted on a child. I would like to further argue that attempting to subdue or enhance certain aspects of love – essentially homogenizing the multiple aspects of love towards only its pleasantries – as experienced by the individual would be similarly misguided and inappropriate further debilitating individuals such as Bob.

Selling the experience of love through neurochemical alterations, I believe, runs a 'safety first model of love' as conceived by French philosopher Alain Badiou (Badiou 6). Similar to the rise of dating apps that advertise, 'Get love without chance!' 'Be in love without falling in love!' or, even more bluntly, 'Get perfect love without suffering!' the notion of controlling love via disruption of the negative and enhancement of the euphoric is an attempt to attain love without its associated risks. One would have love, but it has been so thoroughly controlled by outside factors, based on what is defined as 'acceptable' in normal life, that it in many ways loses its authenticity. For example, we lose the randomness of love by attempting to direct our attention to what we believe to be the ideal sort of lover. There is no room for, "lovers who come from different worlds, or work through their respective difference" ("Is Tinder Killing Love?"). Instead, as was the critiqued with the misuse of dating apps, we have a tendency to interact narcissistically with those we wish to court and attempt to find ourselves within the other. Instead, for Badiou, love is like, "two musical instruments that are completely different in tone and volume, but which mysteriously converge when unified by a great musician in the same work" (Badiou 75). Rather than consider we know what we want, either from love or in the context of 'higher end goals,' love surprises us with the possibility that we may not. To allow for generalized use, the medicalization of an otherwise normal human experience and the following commodification of the experience should give pause to what we conceive of the true nature of said

experience as opposed to simply move towards an eradication of suffering, both real and perceived.

V. POSITIVES IN DEMYSTIFYING ROMANTIC LOVE

While the line should be drawn for medical intervention at necessity, this does not address the nature of neuroscientific findings themselves in relation to current conceptions of love. As I see it, the demystification of love as conceived by neurological studies can have many benefits. The concern, however, is if love is no more than, "an emergent property of a cocktail of ancient neuropeptides and neurotransmitters," as articulated by neurobiologist Larry Young, then what is left of that universally admired concept (Young 2009)? However, to reduce love to its neurochemical foundations, I believe, would be an overreaction. For one, not much has changed: science has been pointing to this conclusion for a while without the need of neurological evidence. The only difference now is that we feel the evidence much more compelling because it is rooted in the brain, which is much more associated with our sense of personhood. However it is important to note the distinction between the natural phenomenon and the concept we are trying to elicit in using words such as love. In other words, when I conjure the feelings of love it is not to portray the neurobiological reasons as to why I am in love, but rather address aspects of the human experience: the turmoil in pursuing a beloved, feelings ranging from vulnerability to pure ecstasy, and so on. To go about love by describing the concentration levels of various neurotransmitters then would be to miss the point.[1]

That aside, I believe the neurobiological conception of love gives us a greater appreciation of love in general. The primary way I see this come to fruitation is by countering the dominant Romantic conception of love. In his books and web series *School of Life*, where he emphasizes philosophy's relevance to everyday life, author Alain de Bottom has argued extensively over how Romanticism has ruined love. More suited to the upper class, 18th Century intellectuals that conceived the

1. This precisely what is done by neuro-existentialist such as Patricia Churchland. She defines concepts such as love as types of folk psychology that will ultimately be replaced with more accurate neurobiological representations. One such example was sketched from Pat coming home from a frustrating faculty meeting and exclaiming, "Paul, don't speak to me, my serotonin levels have hit bottom, my brain is awash in glucocorticoids, my blood vessels are full of adrenaline, and if it weren't for my endogenous opiates I'd have driven the car into a tree on the way home. My dopamine levels need lifting. Pour me a Chardonnay, and I'll be down in a minute."

movement than for modern relationships, romanticism idealizes a very impractical conception of love. Take for instance the obsession that a particular feeling rather than practical considerations must guide love. Understanding then that the evolutionary and selective causes for said feelings are more based on reproductive success rather than some sort of other worldly connection should serve as a slap to the face to romantics. Especially in understanding how these systems were never meant to uphold monogamous relationships for as long as we do now should remind us that, as put by Alain de Bottom, "love is a skill, not a enthusiasm" (de Bottom 182). While this sounds like a very pro self-shaping mindset, I should stress that this works so much as it is the knowledge of these processes, which can help guide our pursuit of love, rather than permanent alterations, whose efforts may be misguided as discussed in the prior sections.

VI. CONCLUSION

It is not unreasonable to want to intervene on the part of love and its particularly violent and intense nature. However, any sort of intervention needs to consider the broader nuances in its application to be successful. I have tried to portray here that while it may be tempting to intervene on behalf of love it would be a misunderstanding of the nature of love if used beyond the requirement of necessity. However, it is by no means a betrayal of love to continually seek out its influences, but rather the discussion on these factors and our possible role in them only crafts us into better lovers.

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compos mentis

Popping One "Study Drug" At A Time

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ABSTRACT
According to the website, Addiction Center, "...a study found that full-time college students, between the ages 18 and 22, were twice as likely to abuse Adderall than those of the same age not in college" (2017, 1). Abuse of " smart or study drugs," as many call them, has become a rising and prevalent issue on college campuses. In today's society, people without medical prescriptions are usually the ones to blame for the overuse of ADHD medications, such as Adderall. Looking deeper into the matter, the factors that lead to this stimulant abuse can find their origins in stress and pressure from society, forcing students to turn to imprudent choices, ones that could potentially lead them to becoming addicted to stimulants and using them only to boost their neurotransmitter levels in the brain, so they could feel an immediate release for a few hours. Regardless of the reasons for taking these stimulants, it is irresponsible for people to use them without a medical prescription because they do so only for personal reasons, such as for something as trivial as taking an exam. Surely, doing something purely for academic enhancement should be considered unethical and unsafe towards one's health. It is unethical because it is unfair to people with ADHD diagnoses when classmates without ADHD use stimulants to improve their already functioning brains. While students without ADHD can use the stimulants to boost academic performance, the boost seems like cheating to many. In a 2012 study involving 616 Ivy League college students who did not have ADHD, 41% of the students thought taking stimulants was a form of cheating, while 25% said they were unsure (Glatter 2014, 3). Certain people with ADHD, by contrast, need the drugs to function and to get through their everyday lives, so it is not "cheating" for them. More people need to become educated on this topic, understanding the consequences and side effects that could lie behind popping Adderall into their mouths for the first time without a proper medical prescription.

KEYWORDS
ADHD, Adderall, Study Drugs, Irresponsible, Unethical, Unfair, Unsafe

POPPING ONE "STUDY DRUG" AT A TIME

Adderall is a Scheduled II controlled substance because of its high addiction level, ranking at the same position as cocaine (Addiction Center 2017, 1). Abuse of this stimulant is one of the worst addictions anyone can face. According to the website, Addiction Center, "...a study found that full-time college students, between the ages 18 and 22, were twice as likely to abuse Adderall than those of the same age not in college" (2017, 1). Abuse of " smart or study drugs," as many call them, has become a rising and prevalent issue on college campuses. Additionally, those students without medical prescriptions for the drugs are the ones to blame for the misuse. They are illegally obtaining these stimulants, not knowing the side effects or how their bodies could react once taking them. Due to the easy access of these study drugs, especially from friends with ADHD, "… misuse and emergency room visits related to the drug is the result of diversion, people taking medication that is legitimately prescribed to someone else… non-medical use of Adderall (that is, taking the drug without it being prescribed) rose 67 percent and emergency room visits went up 156 percent" (John Hopkins Bloomberg School of Public Health 2016, 1-2). Getting their hands on these study drugs is becoming second nature to many, simply because no consequences are faced by either party, those giving out their prescriptions nor those taking illegal advantage of them. This issue is becoming problematic because students without ADHD are using the stimulants to boost their academic performances when they are left with no other choice to achieve that "perfect" exam grade and need an alternative focus method. While students without ADHD can use the stimulants to boost cognitive results, the boost seems like cheating to many. Looking deeper into the matter, the factors that lead to this stimulant abuse can find their origins in stress and pressure from society, forcing students to turn to something imprudent, like becoming reliant and addicted to these drugs. In a 2012 study involving 616 Ivy League college students who did not have ADHD, 41% of the students thought taking stimulants was a form of cheating, while 25% said they were unsure (Glatter 2014, 3). In my opinion, I find that it is cheating because it falls under the category of doing an assignment or taking an exam with "help," even if it is not aid from another human being. Regardless of the reasons for taking these stimulants, it is irresponsible for people to take them without a medical prescription because they do so only for personal reasons, such as for something as trivial as taking an exam, whereas certain people with ADHD need them to function and to get through

their everyday lives. Surely, doing something purely for academic enhancement should be considered unethical and unsafe towards one's health. It is unethical because it is unfair to people with ADHD diagnoses when classmates without ADHD use stimulants to improve their already functioning brains.

STRESS: THE FIRST KILLER

Finals week in college can be stressful, cramming four months of material into two weeks of studying. Nevertheless, it has been proven a college student's stress levels are reduced during this chaotic week with assistance from study drugs. "…Google searches for "Adderall" in college towns spike during exam months…200,000 tweets mentioning Adderall…peak during exam periods" (Pierson 2015, 5). Final exams force college students to do anything for a perfect grade with as little stress as possible, even if it means putting their health at risk. According to USA Today College, Dr. Ritchey accurately describes the storm of stress that college students face when taking exams. "…we have come to a place in our culture where students will do anything to get the grade. Where students get in the mindset 'I need to get to the end, I need to pass this, I need this to get through this week,' and these drugs provide a means to that end" (Brennan 2015,1). Stress is a major factor that influences students to find an alternative way to get an A plus on an exam, if simply studying for a few hours is not making the cut anymore. For many, these drugs are the "new" solution. They are supposed to increase performance on exams by allowing students to study more efficiently because "…ADHD stimulants increase the amount of certain neurotransmitters, like dopamine, epinephrine, and norepinephrine" (Yanes 2014, 2). When the drugs are in the system, stress leaves the body and instead, one is put in a completely separate world, a world without any distractions from reality. For those without ADHD, this "fantasy place" is where their brain goes to for immediate release for a few short hours, a release that empowers them to think they can take on any task.

THE WORLD FOR ADHD PATIENTS

In the article, "Popping Pills: Examining the Use of 'Study Drugs' During Finals," author, Collin Brennan, interviews Sam Dillistin, a college senior with ADHD at Christopher Newport University, and he asks the student to describe how he feels under the influence of his prescribed medication. "…I immediately feel

the benefits of the stimulant and begin to notice how the drug gives me "tunnel vision" while working on any given assignment…whatever you are doing at the time it really helps you focus on that one thing…you almost become cynical with the outside world. You are in the zone, completely zoned out. It is not a natural feeling you can come up with yourself" (2015, 2). To contemplate on his words, I find it ethically responsible and safe for students, like Dillistin, to take ADHD pills because the stimulants assist them not only for school related assignments, but also simple everyday tasks, such as sitting in class or keeping a conversation going with someone. For patients like Dillistin, the neurotransmitters in their brain are not fully functioning. The medications increase these neurotransmitter levels while calming their hyperactive behavior, allowing them to focus better. Additionally, their health is not put on the line when taking these stimulants because they do not use them as "study drugs," but rather, as medications that benefit them in a positive manner. The stimulants are not posing harm on their brain, but instead, are numbing their hyperactive behavior, "stepping in" to adjust their neurotransmitter levels.

On the other hand, students unlike Dillistin have brain regions with neurotransmitters that are in no need of extra help the stimulants provide, which is why they should not be overdosing their brain with higher than normal neurotransmitter levels. Alongside discussing the reaction the stimulants have on his cognitive abilities, Dillistin also mentions the amount of times he has been asked by his peers to share his medications. "On several occasions in college I have been asked by friends if they could use my prescription. I know people that give it and sell it to their friends. It feels like it is everywhere, it is really easy to get on a college campus," Dillistin reported. Unlike the college senior, some ADHD patients find it is the "right choice" to naturally share their medications with their peers. "Obtaining stimulants from friends with prescriptions, as the vast majority of college students do, seems less dangerous and illegal than buying drugs off the street" (Yanes 2014, 3). Students feel more at ease getting these drugs from people they know and trust rather than from strangers. In Brennan's article, a physician that was interviewed, Dr. Ritchey, states, "..it would almost seem cruel not to help that friend out…if I see a friend that needs something that works for me why would I be hesitant to help them out" (2015, 5).

Pressure to help a friend is a heavy burden put on the ADHD student, whose friend is begging him or her to share their "magical pills," ignoring the

consequences that could lie behind both of their actions. These magical pills may be life savers for students like Dillistin, but they are not always be as beneficial for those who use them purely to experiment how much better they can do in school. Little do those, who take the stimulants without a medical prescription, know that their brains and bodies may not react as naturally as Dillistin's does to the medications, so they could potentially cause more harm than good to themselves. Even though the stimulants may give them a release from reality by causing fewer outside distractions, there are many consequences that can come into play after the drug wears off in the system. The short-term effects of Adderall include headaches, sleep deprivation, appetite loss, and even mood swings. Additionally, students may become obsessed with this stimulant, since it is an addictive substance, which simply proves that taking it is definitely an unsafe and impractical decision towards one's health.

NEAR DEATH EXPERIENCES

In her article, "Generation Adderall," author, Casey Schwartz, reflects upon her past college experiences using study drugs, while not having have ADHD. These pills led to the detrimental decline of her health; they almost caused her death. She was a sophomore at Brown University, a college environment that pressured and likely led to her stimulant addiction. Schwartz's case is eye opening because she tells readers a truth that is a challenge to admit: how hard it is to break an addiction like the one she faced. It took her years of therapy, hospital and psychiatrist visits, and support from family and friends in order to one day completely rid her body of this dreadful habit. "No one intends on becoming addicted to Adderall. Usually, the problem starts as a way of increasing productivity on a stressful day at work or to study for an important test" (Addiction Center 2017, 2). Similarly, Schwartz did not predict that her first time taking the stimulant would lead to her downfall and eventual addiction. It was her daily struggle to stop taking these ADHD medications because she would feel empty and lost without them, constantly craving being in the "exclusive world" that the pills put her in. Like Schwartz, people do not realize that these pills also have more side effects than just becoming part of a "fantasy world." "I was anxious, terrified I had done something irreversible to my brain, terrified that I was going to discover that I couldn't write at all without my special pills" (Schwartz 2016, 12). These drugs

cause temporary pros, like better focus, at the moment of their use, but these effects do not last for longer than a few hours.

To her surprise, Schwartz felt so out of control of her body while taking these study drugs that she did not even realize her health and brain function were at risk, until after she landed in the hospital. Nevertheless, even after her first near death experience, she did not and could not stop her habit. Taking the stimulants became second nature to her, something she needed and would do no matter the consequences, such as her weight loss, constant mood swings, headaches, or even skewed sleep schedules. To compensate for these side effects, she came to the conclusion that she had to keep taking more pills, thinking they would miraculously "fix" her whole self. It was not until years after that Schwartz convinced herself she needed to learn how to function without help from her "special pills," pills that to this day, still have detrimental long-term effects on her health. Study drug use by people without ADHD, like Schwartz, can be genuinely harmful. Therefore, one reason to think that they are morally impermissible is that they lead to harm of the users.

PRESSURE: THE SECOND KILLER

Pressure can be a strong motivator when doing something imprudent. Some people without ADHD turn to study drugs because they impulsively conclude stimulants are acceptable since their friends and everyone around them are making a similar decision. Looking back upon Schwartz's college career, she definitely faced much anxiety and stress put on her because of the high-ranked school she attended, where study drug abuse was high, which could have been a major contributor to her personal decision to take ADHD medications to improve her academic performance. High-ranked universities tend to have the best statistics in the country; so naturally, their students need to and are expected to have top tests scores when performing on standardized exams, such as the DAT or the MCAT. At Ivy League schools, you see many over-achievers, or students who would do anything and everything to be first in their class, which is why you might predict a higher stimulant usage in these types of school environments. "… Adderall is more popular at colleges with competitive admissions standards, you might also expect it to be used more by high-achievers" (Pierson 2015, 4). Like Schwartz, many of these "high-achievers" at these Ivy League schools are not always capable of taking on the type of pressure they have to endure being part

of such a competitive school, which is why they may eventually turn to study drugs to lessen their pain along their strenuous educational journey. However, many do not consider the consequences of their actions, especially how hard it is to quit an addiction. "Stimulant misuse can lead to medical complications including resulting anxiety and withdrawal in those who do not have ADHD after they stop using the medications…" (Glatter 2014, 1). Schwartz, like many stimulant abusers, did not pause to think about the consequences that came with addiction. If she could go back in time, would she choose to once again start taking ADHD medications simply to excel on a few papers and exams? Would she have wanted someone to educate her on why the cons of taking these study drugs actually outweigh the temporary pros they provided her with? Was it the responsible choice for her to keep taking these stimulants after her near death experience? Study drugs should never be the answer, especially not to pressure from school related classes and activities. They pose too great of risks to those who take them if no doctor gives them proper approval to. For Schwartz and those without ADHD, stimulants can alter their normal cognitive and functional brain levels, leading to more downsides than perks. Many people do not realize that these stimulants are definitely not worth the risk of jeopardizing their health, which proves that they are not only reaching for an impractical solution to achieve academic enhancement, but also underdoing an unsafe choice.

ONE PILL LEADS TO AN ADDICTION

On a more personal note, there is one experience that stands out to me most when I reflect on my most recent finals week, since I encountered someone who took Adderall right in front of me. It was the last day of exams. Before we could enter the room to get to our desks to face our catastrophic organic chemistry exams, I remember seeing a classmate in the distance of the long hallway. He was mysteriously turned around, face towards the wall, with his back to all of us. Curiously, I decided to walk down the hallway to "fill up my water bottle," but really, I was playing Sherlock Holmes and trying to solve the mystery of this classmate's sketchy actions. As I approached him, he put his hand towards his mouth. Just like that, I instantly knew I solved the case. He took a study drug, probably Adderall. In his defense, I thought that maybe he had a prescribed bottle in his palm, but right after he popped the pill, the little baggy he held onto, filled with at least ten more of those "magical pills," said otherwise. At that

moment, all I could think about was how he felt after taking that drug. Did he do it because he actually needed it to "focus better"? Or did he pop a pill because he did not have the strength to sit through and battle the E1 and SN1 mechanisms awaiting us? What I did know was that a sense of anger and irritation rose through my body. I had five finals that week and I was not taking any stimulants to improve my scores. I felt as if my classmate had an advantage over me because these pills gave him a little extra "push" that I did not have, which is why I would consider this cheating. He made an irresponsible choice, a choice that was not only unsafe towards his health, but also one that benefitted *only* him and no one else in the class. It is not only risky to take study drugs, but it is also unfair since it gives you an extra "push" from an outside source.

Similarly, I would compare my classmate's actions to that of a competitive athlete taking steroids. Steroids help build more muscle in shorter periods of time, just as this ADHD medication helped my classmate's neurotransmitter activities in the brain to be twice as stimulated as everyone else's in the classroom, which is why he cheated. His actions should not be justified. Instead, they should open the eyes of college students who take Adderall and those who find it an "acceptable" practice. If one takes an exam or writes a paper with the help of stimulants, could they have not done the same without the drugs in his or her system? The drugs do not add more knowledge to the brain of someone without ADHD, but instead, they simply help with them focus with fewer distractions. Therefore, I think it was ethically wrong for my classmate to take Adderall because the medication would not help him learn last minute material, especially if he did not study, and the only thing the stimulant could have assisted him with would have been calming his mind down and putting him in this own world. My irritation comes when college students degrade their intellectual levels, thinking they cannot sit through an exam or write a paper without study drugs. That is how an addiction starts. Addictions come about when people least expect them too, when they keep telling themselves, " just one more time or one more pill." That one more time turns into a daily and unfair habit, a habit that is twice as hard to break than it is to start, and one that also takes advantage of those with ADHD and need these stimulants for daily functioning. Finally, it is also irresponsible and wrong to use stimulants solely for personal reasons, like exceling in school, since that is not their purpose to begin with.

PLACEBO EFFECTS: IS BRAIN ACTIVITY REALLY "FIXED?"

Nowadays, society can definitely pressure us into trying to be our most perfect selves. From school to extra-curricular activities, we are supposed to have that outstanding GPA, hundreds of shadowing and work experiences with the best doctors, research at the top laboratories, and anything else that makes us "stand out" as applicants for jobs or graduate schools. However, is it morally ethical to reach our best selves with the extra help of ADHD drugs like Adderall? Individuals today are not educated enough on the side effects these drugs enforce on the body. "Short-term adverse consequences include sleep difficulties, restlessness, headaches, irritability and depressed feelings…loss of appetite, nervousness and changes in sex drive" (Yanes 2014, 2). People use these drugs to "improve" their so-called attention levels and performances while studying, but evidently, there is not too much physical improvement on their overall health. On the contrary, one could also argue, with the studies done, that stimulants cause nothing more than placebo effects. "Research has shown that the placebo effect of ADHD drugs is quite large, so you feel focused because you tell yourself that's supposed to be the effect…a review of 40 studies found that in more than half of the research, adults without ADHD who took stimulants didn't see any cognitive improvements" (Puniewska 2016, 2). Therefore, these study drugs may not have the effects non-ADHD patients tell themselves they do, which is another reason they should not take them. If we program our brains to do something or feel a certain way, naturally, we fall into this trap and what we want to happen usually does happen. By knowing the effects stimulants should have on our cognitive abilities, we expect our brains and bodies to act this way, telling ourselves that the medications are working, when really, as this study proved, our brains are not altered and instead, our sense of thinking is. Therefore, if our brains are not always changed to improve our academic performances, why do we need stimulants to have the same results in the end?

I find that only those who, unlike my classmate, need ADHD medications to function on a daily basis should be the *only* ones to truly feel the real side effects on their behavior and brain due to the stimulants. "Someone with ADHD tends to have a very inactive prefrontal cortex, the area of the brain that controls things like attention span. "Give them a stimulant and they're relatively back to 'normal' because these drugs hike up the neurotransmitter dopamine in the brain's reward center, which helps people feel more alert and attentive and has a calming effect"

(Puniewska 2016, 3). My best friend, who is diagnosed with ADHD, once told me, "I use my medication, not only for focusing purposes, but also for my everyday life, to help my body function properly. I feel that if you need ADHD medication, then definitely take it. However, using it for social or "educational" reasons is quite unnecessary." Living a "normal" life for my best friend is different than the "normal" life I live. Her brain works in another way, and I know she tries twice as hard as her peers to finish her school assignments because she cannot focus for long periods of time. ADHD causes her to be distracted easily, and these stimulants allow her brain to be brought up to the normal functioning level of those students without ADHD that she is competing with in classes for that top grade. For patients with ADHD, they lack what individuals with normal brain activity levels possess. For them, it is the safest, an ethical, and a responsible choice to take their medication, since they would not function through their everyday tasks without this extra stimulant help. However, for those without the diagnosis, these study drugs might not actually assist them. It is unfair patients without ADHD to take these stimulants if they are not even demonstrating the proper effects that they should be having, which is another reason why those with ADHD should be the only ones taking the drugs.

MORE EDUCATION IS NEEDED

In conclusion, I believe that more students need to be educated on the topic of "Generation Adderall," as Casey Schwartz has named the epidemic that has been contagious for years. Our generation should hear more stories like Schwartz's in order to become more aware of the consequences that smart pills have on those people who do not suffer from ADHD, as well as why it is an irresponsible choice that leads to unsafe health risks. ADHD patients need their medications in order to survive. For those unlike Schwartz, Adderall is the answer to their stress, their pressure from society to "fit in" and to be more "normal," as well as their lack of proper neurotransmitter activity in the brain. For people like my best friend, it *is* the responsible and proper choice to take stimulants to live a normal life. However, for those around my friend that do not suffer from ADHD, it is irresponsible and wrong that they take these medications to improve their already functioning brains. Their decision to take stimulants to *only* better their cognitive results is where they are imprudent and lack proper education on this topic, the effects overdosing on these drugs could have on their health, and why

it is ethically wrong to take stimulants like Adderall, which is a highly addictive narcotic. College students need to be informed and taught that the downsides that come with making a choice that could change their whole lives, as it did for Schwartz when she took Adderall for her first time, has more cons than pros in the long run. Then, maybe then, students might think twice the next time they have to write a paper and are about to pop a pill into their mouths without even realizing the negative impact this one decision could have on their future.

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