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Introduction

Thank you for your interest in *Compos Mentis: the Undergraduate Journal of Cognition and Neuroethics*. This issue is the first of volume four, and the articles contained herein represent the thoughts, insights, and work of a handful of undergraduates from across the U.S. who presented their arguments at the Fourth Annual Michigan Undergraduate Philosophy Conference, hosted by the Insight Institute of Neurosurgery and Neuroscience, as well as by the University of Michigan—Flint Philosophy Department.

The goal for this publication has been to create a space for undergraduate students to share their ideas with one another, in order to encourage dialogue and active discourse. *Compos Mentis* addresses issues within studies as diverse as philosophy of mind, Neuroethics, medical ethics, philosophy of science, and cognitive science. This breadth of focus encourages students from different disciplines to communicate and consider the implications one argument has on another, stimulating an emphasis on interdisciplinary enquiry.

Each student published in this and in previous issues first submitted an abstract to a blind-review board, consisting of faculty members as well as students. Those whose abstracts were selected for publication were asked to present their paper at the Michigan Undergraduate Philosophy Conference, hosted at the Insight Institute of Neurosurgery and Neuroscience. Afterward, all were given one month to expand and revise their papers to include responses to substantial feedback and/or criticism brought up by fellow presenters during the conference. Those who presented at the conference, and who subsequently revised and expanded their papers, were then reviewed once more by a blind-review board and published in this issue.

Putting together a bi-annual publication requires a lot of work and effort, not only on behalf of those students whose articles made it through the selection process, but also—and especially—on behalf of the faculty members who made it all possible. I would like to thank Dr. Bénédict Veillet and Dr. Simon Cushing for their discernment, consideration, and for their time given to put this issue together. And a special thanks goes to Dr. Jami Anderson for her guidance, support, and generosity. Without her giving her time and energy to this publication, to the conference, and to the UM—Flint Philosophy Department, none of this would have been possible. Another special thanks must go to

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The Revised Enactive Account: Interpersonal Understanding and Perceptual Achievement

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ABSTRACT

Most of human action is guided by perception in the absence of reflection. This paper seeks to defend Alva Noë's argument in Action and Perception that perception is a rational action, and to extend his account to describe the functioning of perceptual understanding in social interactions. Perception is active in that we track relationships between appearances and objects of perception themselves. According to Noë's anti-representationalist account of perception, we must be shown to achieve accurate perceptual understanding (what he calls perceptual presence). This entails that we can accurately employ our skills to successfully navigate the appearances of objects that we engage with. In the first section, I outline Noë's account of the achievement of physical content, and define the notions of sensorimotor understanding, and perceptual presence. The second section extends Noë's enactive account to describe the perception of social content, introduces the possibility of achieving social perceptual presence, and explores how fragility pervades perception in social interactions. I draw upon Maurice Merleau-Ponty to indicate the role that our own body and the bodies of others play in putting our minds into the world. Minds are directly perceptually experienced in that our actions display our minds, and the norms that guide our behavior. In the third and final section, I return to Noë's notion of fragility and examine how my extension of his enactivism (what I call the Revised Enactive Account) explains failures to accurately perceive and understand others. I consider implicit bias and generalizations to be instances of the failure to achieve social perceptual presence. I conclude by discussing further applications and implications of this project. If successful, this paper opens the door to explore normative perception, and agency during non-reflective (inter)actions.

KEYWORDS

Enactivism, Perception, Understanding, Perceptual Presence, Fragility, Implicit Bias, Interpersonal Understanding, Alva Noë, Maurice Merleau-Ponty

INTRODUCTION

Perception guides the majority of human behavior without interference from thoughtful reflection. We often respond immediately to our situation when engaging with objects or other people, without pausing to reflect before taking action. We hold open doors for people, we stand the appropriate distance away from someone while talking, and we hug our friends but shake our bosses hands; and we often execute these actions without thought or error. However, some of the most serious issues arise from situations when thought is not involved, and our responsive abilities take control. Troublesome problems like prejudice and discrimination arise from a misperception and misunderstanding of the other. This paper seeks to uncover the root of error in social understanding. I develop the argument that the interpretations accompanying our perception can be made transparent and accessible to facilitate our ability to locate and repair gaps in our understanding. I assert that fixing our understanding entails repairing the skills we use while navigating both the physical, and socio-cultural world. In constructing and defending my argument I extend the enactive account of perception forwarded by Alva Noë in *Action and Perception* to encompass instances of social perception and understanding. The resulting Revised Enactive Account (from now on referred to as REA) investigates the perception of social significance during interpersonal interactions.

My argument shows that social perception occurs in the same mode as the account of physical perception forwarded by Noë in *Action and Perception*. The REA's extension of Noë's account into the world of socio-cultural significance can hold people accountable for actions they take in response to others, even in the absence of thought. This paper uncovers cognitive structures and mechanisms that shape our social perception. First, I examine how we come to perceptually understand physical objects, then I extend the account of skill-sets involved in understanding physical objects to investigate their function in social interactions. In surveying our interpersonal understanding in social contexts, I propose ways in which we can deepen and improve our understanding. My argument relies on the claim that social content—like cultural norms—can be perceived without the need for reflection. This argument requires that I show both how our minds are displayed in the behaviors we execute, and how we access social norms that guide our actions without reflection. This explanation of social content results in

an account of how social understanding engages with objects of perception, how it fails to engage, and how to repair our understanding to avoid such failures.

SECTION I

Alva Noë gives an account of the role that understanding plays in perception in *Action and Perception*. On this account, the actions we take to explore our world exhibit our understanding. According to Noë, accurate perception is an achievement that relies on our understanding of various ways we can interact with the world. In portraying perception as an achievement he posits that we actively explore the way the world appears *to* us *from* here in order to find out how the world is through these multiple appearances (Noë, 2014, 85). He provides an account that delineates what content stimulates our sensory organs, and what content is present as absent. The former is sensorily given, and the latter is experientially achieved, but both are directly available to our minds. The present as absent content can only be presented and acted upon if we have the appropriate perceptual skills. The problem of using our skills to determine the present as absent content is called 'the problem of perceptual presence.' Achieving perceptual presence means having accurate expectations of how actions would bring present as absent content into view (Noë, 2004, 119). For example, I know how to pick up a coffee cup and turn it to see its backside, or bring it to my lips for a sip.

The enactive view that Noë presents entails that we access the world with our minds, rather than construct internal isomorphic models. Accordingly, our bodily actions demonstrate our embodied mind. Noë' calls this sensorimotor understanding, and focuses specifically on how our bodily movements fill out our experiential contact with the physical world.[1] Sensorimotor understanding engages with the world by exploring how appearances relate to the thing itself. Noë argues that we achieve perceptual presence when sensorimotor understanding can bring

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1. For those interested in a debate about the nature of non-reflective rationality, the extent to which such behaviors are rational, and how much they depend on the body, Rietveld's 2010 article on the McDowell Dreyfus debate is a particularly helpful entry point, as is Schear's 2013 collection of essays.

us into contact with all the relevant details about how appearances relate to the thing itself.[2]

Noë's enactive account critiques the representationalist view of content. Representationalists liken perception to a camera that captures detailed snapshots of our perceptual field. According to representationalists, all of the perceptual content of the world is given to consciousness instantaneously. The main problem that accompanies the representationalist view is accounting for how we achieve a perfect representation from imperfect sense organs that give us flawed presentations. As Noë states: how is it that "we can enjoy this sort of richly detailed, high-resolution visual experience, when our actual perceptual contact with the world, in the form of the stimulation of the retina, is so limited[?]" (Noë, 2004, 36). Our eyes cannot present our brain with all of the content necessary for such a detailed picture because of the blind spot that interrupts our perceptual field where the optic nerve attaches to our retina, and this gap in our visual field must be filled in by the brain. The representationalist tradition has lead many scientists and philosophers to look for an explanation of how the brain initiates a neural process to complete the picture by filling in these gaps with information.

Perceptual detail is confined to a very small focus area in the center of our visual field. Noë points out that the representationalist argument of the experience of rich perceptual detail cannot account for the many instances where movements are necessary to access bring detail into focus (Noë, 2004, 49). When motion is detected on the edge of our visual field, the brain is limited by the uneven distribution of cones that give us color content. The brain alone cannot tell us what color the moving object is, but instead relies upon our movements to access the rich detail. Only by directing our eyes toward the moving object can we accurately perceive its color.

According to Noë's enactive account, the representationalist tradition is based on a flawed supposition of how we experience the world. By introducing the enactive account of perception, Noë avoids the need to explain how the brain transforms sensory information into detailed mental representations. According to Noë, we do not internally represent the rich detail of our perceptual field as a picture. Instead, the detail of our perceptual field is accessible, which means that

2. According to Noë the most notable difference between achieving perceptual presence and missing part of the sensorimotor profile is a fuller experience of present as absent content. Perceptual presence is demonstrated by successful engagement with this content.

our perceptual field has extremely little detail until we access the detail with our movements. Even when we are not accessing details, our skills can give us "quick and easy access to the relevant detail when [we] need it" (Noë, 2004, 50). This erases the problem of creating isomorphic world models, and replaces it with a need to explain how we identify and access relevant details in the world.

The difficulty of making detail accessible is the aforementioned problem of perceptual presence. In order to understand how detail is accessible even when it is not being accessed, Noë introduces the difference between an object's appearances to us from here, and how it exists in the world (Noë, 2004, 164). For example, when I encounter an apple I only have sensory information about the side facing me. However, by achieving perceptual presence I can experience the apple as a whole, including its occluded backside. On Noë's enactive account, we achieve perceptual presence by gathering and assembling content. "Looks are genuine, relational properties of things," so we access the object by understanding the ways that various vantage points present the object (Noë, 2004, 164). In understanding the object we understand the way that relationships between us, the object, and the environment shape the pattern of appearances. Understanding this pattern allows us to anticipate how our movements and the object's movements affect appearances. Thus, rather than being given the detail in the form of a mental picture, we enact our understanding and respond to accessible detail in the world.

In fact, our entire body enacts perception. The body is central to the process of exploring the world and gathering various appearances until we achieve presence. Bodily actions place the mind in direct contact with the world. Navigating and accessing these appearances is an authentic encounter with the world because appearances are real properties of the object. We do not compose models that take us from in here to out there in the world. In fact, according to Noë there is no in here and out there, rather: "this encounter with how they [things] appear is itself an encounter with the world" (Noë, 2004, 85). The process that achieves access and compiles the multiple appearances from various vantage points is called sensorimotor understanding.

Noë likens the achievement of perceptual presence to understanding, because he views perception as a kind of conceptual activity. Sensorimotor understanding is a kind of know-how for Noë. He identifies concepts as things that enable us to access and grasp the world, rather than limiting concepts to propositions. Noë

resists over-intellectualizing the intellect by claiming that knowledge enables access and need not always fix reference (Noë, 2012, 38). Noë argues that our faculties allow us to access the world instead of requiring that our minds create a complete model of the world. We know where to look for detail, rather than holding all of the detail in our mind at once. Experiential blindness demonstrates the mode of understanding involved in sensorimotor understanding.

In *Action and Perception,* Noë describes experiential blindness: what he defines as blindness due to the "inability to integrate sensory stimulation with patterns of movement and thought" (Noë, 2004, 4). Experiential blindness is the failure of our sensorimotor understanding to make content available in such a way that allows our successful engagement with objects in the world. According to Noë such blindness results from a misapplication of a sensorimotor profile, or a partially or completely missing sensorimotor profile. Noë argues that perception achieves access to the world, and avoids experiential blindness, when our skills act upon sensory information in the right way to create experience. Noë's illustration of experiential blindness provides a solid account of how sensorimotor knowledge supplies content to perceptual experience: "It demonstrates that merely to be given visual impressions is not yet to be made to see" (Noë, 2012, 5). Seeing is not passive, it is understanding sensory information's place in a pattern of sensorimotor dependence. Such patterns shape our anticipation of what changes in appearance result from movements. Additionally, cases of experiential blindness uncover the fragility of our perceptual presence.

Kohler's reversing goggles experiment exhibits one instance of experiential blindness.[3] In this experiment objects located on the right stimulate the left eye and vise-versa. Subjects experience three stages of experiential blindness as a result of right-left reversing goggles. In the first stage of adaptation, objects on the left merely appear to be on the right. In the second, tactile senses defer to vision such that objects on the left not only *look* to be on the right, but are *felt* on the right side as well. In the final stage objects on the left are experienced on the left, even though they are registered by sensory organs on the right side of the subject's body. Notably, this final stage is only reached when subjects actively interact with and navigate their environment. This is a case of experiential blindness as evidenced by the fact that patterns of sensorimotor dependence in the perceiver break down—our actions no longer successfully engage with

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3.   Kohler described by Noë, 2012, 62

objects. Our movements no longer completely engage with the objects in the world because the goggles prevent us from accurately anticipating what changes in appearance result from which movements.

The enactive account argues that this phenomenon illustrates that sensorimotor understanding supplies the content of perceptual experience. In the case of reversing goggles, subjects that reach the third stage of adaptation exercise sensorimotor knowledge in a way that more closely engages with the objects as they are in the world than those in the first stage. Sensorimotor knowledge is responsible for presenting the world as we experience it. Accurate sensorimotor knowledge responds to the way the world is as a result of how it appears to us. Consequently, the more we hone our sensorimotor skills, the better we are at successfully engaging with the world.

Cases of experiential blindness reveal the extent to which perceptual experience depends on our sensorimotor skills. This understanding implements concepts that enable our interactions in the world. Sensorimotor understanding tracks relations between objects, the perceiver's body, and the environment. Perceivers implement concepts in a similar way that one would implement calipers: we grasp the world and understand the relational affects of our actions thanks to sensorimotor understanding. Accordingly, the exercise of sensorimotor understanding fixes the scope of perception. This point relates to experiential blindness: we cannot see an object accurately if we do not understand how our actions would change its appearance. Therefore objects that we do not understand do not turn up fully in our perceptual field. We grasp the object by having all of its details available to us, and by knowing how appropriate movements access these availabilities and change appearances. Noë compares this grasp to how we hold an entire person by holding their hand. But there are more appearances than just the physical. I argue that when we access the whole object we access its social content as well.

In the next section, I argue that the realm of perceptual objects is not restricted to physical objects. A closer look at the requirements for perceptual objects indicates that social content is an object of perception. I posit that our skills are able to anticipate how our actions bring about changes in other people as a result of our ability to perceive norms that guide and structure these interactions. I argue that in extending Noë's account, the REA readily describes social interactions and suggests how perception causes misunderstanding between people.

SECTION II

Noë does not address the cultural components of perception. I will further expand the notion of sensorimotor understanding to describe how our perception is socially informed and embedded, and how bodily actions are essential to achieving presence while interacting with others in environments containing cultural significance.[4] I will draw upon Merleau-Ponty's account of the embodied mind to indicate how we directly perceive others during social interactions. On this account a person's mind is perceived in their actions, hence we have direct access to other people.[5] I argue that our understanding of social content structures our understanding of the other, allowing us to access relationships between appearances of others and how they are in actuality. Social content shapes the significance of actions, and plays a central role in guiding our anticipation of the effects our actions have on others. My main claim is this: we directly perceive the minds of other people, and this perception uncovers norms active in social situations by repeated socialization.[6]

For my argument to work, social content needs to be directly accessible to perception. Social content is composed of the norms that guide behavior in group settings, and these can be understood through perception. Norms are often expressed in scripts for social scenarios. Scripts contain responses we deem appropriate given our understanding of others. A mind is embodied in another's actions, and as such the norms that govern their behaviors can be understood by observing behavior under a range of different scenarios. We typically draw upon these scripts non-reflectively. By observing the actions and responses of others we

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4. I do not cover the role of emotions in intentionality, or emotions as motivations to achieve accurate interpersonal understanding but for further reading on the role of intentionality see: Drummond 2004, 2013, Slaby 2008 and both of Ratcliffe's articles from 2005 cited below. For more about emotions as motivators in perception see Frijda's 2002 article.

5. Romdenh Romluc's 2011 unpublished manuscript as well as Thybo-Jensen 2013 discuss how our embodied perception can be considered rational, particularly without reflection. My account draws upon these arguments but examines how we perceive the embodied minds of others

6. My hope is that establishing this implies a further claim that we are responsible for the perceptual tools of understanding that we utilize in engaging with the other in a world of socio-cultural significance. For a more in depth discussion of non-reflective agency see Doris 2015. Additionally for more about what is considered reflection and what is not I drew upon Jacob's unpublished manuscript.

construct an understanding of how social norms are expressed in actions, and the range of scenarios that a norm actively guides.

As discussed above, the enactive account puts stress on maintaining access to dynamic relationships between appearance and anticipated change in an environment. It is important to notice the fragility of our presence. In examining fragility, Noë identifies two possible ways we fail to attune ourselves with our environment. First, we can be mistaken about how things look; secondly, we can be mistaken about our relations to things. Accessing appearances without understanding how they relate to the object in the world distances us from our world. If we are not mindful of the pattern we are accessing, our anticipations will be incorrect and our actions will fail to achieve their desired goal.

Fragility is problematic because we only access the world through appearances and often it is hard to identify how appearances relate to the world. This is why lapses in presence are hard to detect. However, the fact that we only access the world through appearances does not mean our access is not direct, it merely means that our skills are responsible for maintaining this direct access—it does not come free. This is because in perceiving appearances we perceive the world, not our visual field, which means we have trouble becoming aware of flaws in our perceptual understanding (Noë, 2004, 72). It follows that appearances tell us about the world, but we are responsible for discovering what they communicate to us. Lapses in perceptual presence occur when we misinterpret appearances. In the following section, a structural account of the world that we access through appearances will indicate that we are responsible for failures to achieve presence.

The REA must address two main problems: how is social content made accessible in perception and, how can the autonomy of the individual be maintained while non-reflectively responding to cues in the environment?[7] The latter point is concerned with the fact that automatic responses often seem to forfeit responsibility to the environmental cues that triggered the reaction. The goal of the REA is to explicate the role that understanding plays in perceiving these environmental cues and triggering the agent's response. Leon De Bruin and Sanneke De Haan summarize these counterpoints in their article: "Enactivism

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7.   At this point the REA only addresses these two problems I think it can be adapted to fit with Julia Annas's work on virtue and Jacobson's work on moral perception (Annas 2008 and Jacobson 2005). Virtue ethics seems the most prepared ethical view to discuss the sense of normativity in perception, and our obligation to achieve accurate perception of others. However, these concerns are for another project.

and Social Cognition." The first problem arises from the means by which agents couple with their social environment. Coupling, or engagement, occurs when the perceiver maintains direct contact with the objects of perception.[8] The nature of access to norms and other people during interpersonal coupling in social settings is of particular importance for my essay. This is because our access to the other and the norms that guide engagement must be direct in order for them to be considered achievements of *perceptual* presence, and not reflection or deliberation. If access to norms was only achieved reflectively, people may not be considered agents when acting non-reflectively.[9]

Most social interactions are executed non-reflectively, and classifying them as an achievement of perceptual presence allows people to be held accountable for their adherence to perceived norms. The second aforementioned problem, about how we can be considered agents in the absence of thought, is due to the fact that the enactive account maintains that the actions of the perceiver are driven by environmental cues that can be socially determined. It appears that this is possibly explained by the theory of ecological control from sociology, where the agent's autonomy is jeopardized by submitting guidance to environmental cues.[10] However, I argue that people are accountable in social interactions because they are responsible for perceiving relevant norms at play in guiding peoples' behaviors. Further, the perceiver has direct access to the mind of the other person and understands how, or at least that, norms guide their behavior. Additionally, like sensorimotor understanding, social understanding is a fragile achievement. I posit that the fragility of social settings arises in part from people's reliance on heuristics and other cognitive shortcuts. We can easily lose perceptual contact with the other.

De Haan and de Bruin outline the typical responses for how people engage with social content (de Haan and de Bruin, 2012). Noë's enactive account does not explicitly describe how higher level social cognition can be achieved. Abstract

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8.   I use coupling and engagement interchangeably, as both terms pertain to the means by which we achieve *direct* access to our environment.

9.   This engages with the popular assumption that agency depends on rationality. I have no room to argue for this claim at the present. For more reading I suggest looking at how Doris complicates this claim in his recent work *Talking To Ourselves: Reflection, Ignorance and Agency.*

10. Erik Rietveld's work on situation specific responses as well as Steven Crowell's work discuss the possibility of normative assessment of our engagement, as well as the possibility of agency in non-reflective actions (Rietveld, 2008 and Crowell, 2013)

social cognition entails the adherence to norms governing behavior, and the ability to understand how another person's perceptual understanding engages with the world. Two arguments from theory of mind shed some light on a reflective description of how higher level social functioning occurs. Theory theorists (TT) identify intentional behavior as the means of social interactions, and examine how mental states give rise to intentions and actions (de Haan and de Bruin, 2012, 226). In this way we would seek to uncover the propositional intentions of the other person in order to understand their actions. TT treats mental states as conceptually driven, and often explains actions in terms of beliefs and desires that people have. For TT these mental states are internal and un-embodied. Stimulus theorists (ST) differ from TT by proposing that social interactions are process driven. This means that people can interact with others as long as they can take part in a form of mind reading by likening some other person's process of acting on mental states and intentions to their own processing. Mind reading entails continually putting oneself in the other person's shoes (de Haan and de Bruin, 2012, 227). Problematically, ST only allows access to the other through representing our own mind, and assuming it to be a reliable model of another person's mind. De Haan and de Bruin identify the inaccurate explanation of experience arising from TT and ST of mind. Social interactions are not experienced in a third person way, nor do we experience ourselves as reading the other's mind. We engage with their mind through their bodies' actions.

Shaun Gallagher has offered a second-person approach and argues that people's minds are directly accessible through their actions (Gallgher, 2008). However, Gallagher defers to TT and ST when our second personal engagement with others fails to access abstract social content. By extending Noë's account, the REA explains the ability to understand the norms guiding a person's actions in a way that maintains direct coupling with the physical and social world. Although social content is abstract, below I further develop how perception achieves access to norms through their guidance of other people's actions. Actions are mindful, and our repeated exposure to social interactions allows us to understand the limits placed on behavior by abstract social norms. This means that the REA readily explains how to achieve access to norms that guide and give significance

to our actions in a second personal way that avoids over-intellectualizing social interactions.[11]

I aim to elucidate our embedding within a world of cultural norms by examining the role that Merleau-Ponty gives the habitual body in understanding other people (Merleau-Ponty, 1962). Social groups are often represented schematically to facilitate interpersonal understanding. This allows us to quickly perceive and respond to significance in other's actions. The structure of phenomenology reveals our ability to directly access both other peoples' minds in their actions, as well as the norms that guide and inform such interactions.[12] Additionally, phenomenological structure of intentionality allows for an account of failure in social settings that does not require a consequent decoupling from direct access. The phenomenological account of embodied mind importantly prevents both the need to read minds, and the over-intellectualization of human actions.

Merleau-Ponty's notion of the habitual body indicates how the mind is expressed in action, and therefore directly accessible to perception. In *Phenomenology of Perception*, Merleau-Ponty identifies the body's special role as both subject and object. It is that *through* which our world is given. Because our interaction with the world can only be achieved through the body, our bodily movements are themselves expressions of our mind. As a result, repeated bodily movements and the thoughts they enact become part of our habitual body. The habitual body structures our engagement with the world, by determining the range of affordances we perceive and the strength of each affordance's solicitation.[13] Affordances are actions that appear worth doing, and undertakings that attract our attention. We express our habitual body in our movements: it structures our engagement with the world. The building and exercising of our habitual body *is* our mind at work. By acting in accordance with perceived norms, we respond to normative solicitations and thereby place our mind out into the world.

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11. The resulting REA also retains the phenomenological accuracy of a second person account of interpersonal understanding.

12. For a further discussion of how embodied mind can help us to anticipate actions and responses to certain situations, and how such anticipations are formed and experienced see J.C. Berendzen 2014.

13. For more on the affects that habit and attention can have in structuring our perception see Komarine Romdenh-Romluc's "Habit and Attention" in press.

The habitual body of the other is understood as exhibiting their mind by expressing their stance in regards to norms that evoke responses in various situations. We understand their habitual body, their interpretation of the world, and their perceptions by seeing these expressed in their movements. Interpersonal understanding is extremely difficult to achieve as it uses situational norms as a foil to make sense of the another's goals. Peoples' beliefs are expressed in what they say and do in response to social scenarios. However, to understand the social content of a particular person's habitual body, one must also understand the range of appropriate actions determined by societal norms. Our access to societal beliefs is directly understood through multiple interactions, and our encounter with the habitual body of the other is contextualized within the broader realm of social significance.[14]

Importantly, the habitual body has built up heuristics that allow quick, and mindful responsivity. This arises from the fact that "habit is motor and perceptual, [and] lies between perception and movement" (Merleau-Ponty, 1962 153). As a result, the habitual body eases interaction by making perception mindful, and eliminating the stage of intention formation before action. We can act quickly and responsively, and perceiving such actions taken by others is to perceive their mind. The habitual body puts the mind out into the world of direct access by demonstrating the person's means of engaging with the environment. One's style of engagement is shaped by the norms guiding their behavior, as beliefs composing the habitual body structure our understanding. Typically actions resulting from certain norms are restricted to particular scenarios. For example, the norms of sportsmanship only appear when interacting with athletes at a competition. Someone who believes in sportsmanship is more likely to recognize the achievements of others. Values eventually become so fine grained that actions that would violate one's beliefs do not even appear as options. By observing another's habitual body in different settings we can come to understand the norms that structure their behavior. We understand the values of others when we can anticipate what environmental factors are required to make the other act in a certain way. Thus, Merleau-Ponty's notion of habitual body indicates how interpersonal understanding can be directly accessed in another person's actions.

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14. Some of these norms are taken to be universal, others vary from country to country. I discuss the latter later in the paper.

An examination of the structure of social perception elucidates means by which we understand other people. Within social interactions there is the self, the other(s) and a background of norms and societal expectations. In the same way that we perceive presence in absence in physical interactions, we experience the societal norms even though they are not present in the same way as sensory content. We see norms as present as absent by understanding the effect they do and would have on the situation given particular actions. If we are perceptually present we understand what scenarios and actions are necessary to evoke their expression. For example, Peter Norman's behavior on the Olympic podium during the 1968 Olympic games exhibited his understanding of fellow athletes Tommie Smith and John Carlos. After the race, the American sprinters realized they only had one pair of black gloves. Norman understood the beliefs that Smith and Carlos expressed by standing atop the podium with their fists raised in the black panther solute. His understanding is demonstrated by his suggestion that they each wear one glove. Norman demonstrated his understanding of how actions adhere to norms by proposing that they share the gloves, which are essential symbols to the meaning of Smith and Carlos's protest. Norman understood Carlos and Smith's actions expressed solidarity with blacks in the United States, and around the world, that were facing harsh responses to Civil Rights activism. He also understood the relationship between their action and the message of black strength and racial equality. This is just one example of how exploring our engagement with others brings us into perceptual contact with the norms that give significance to actions. Our interactions are determined by which norms are in focus. Encoded in our actions are norms that structure our apprehension, and such actions express to others our worldview. Understanding other people entails that we understand what norms they endorse, and how they express these norms in their actions.

SECTION III

Interactions are shaped by our ability to determine, anticipate, and respond to the social content of actions. The tools we use to understand each other and express norms are limited in their ability to access abstract social content. The fragility and failure to access the social dimension of interactions results from skills or shortcuts we use. This fragility is introduced by our desire to maintain a smooth and easy mode of social processing. We employ schemata to facilitate interpersonal

understanding by grouping people together and making generalizations. Schema allow us to access a group of beliefs that we perceive a person's habitual body to be expressing. Further, we implement schema to anticipate another person's responses to our own behavior. Cognitive shortcuts allow us to interact with the other as a member of a generalization rather than as an individual that we are completely unfamiliar with. Grouping people into schema according to a shared knowledge base is essential to making social interactions smooth and easy.

A study done by Donna Lutz and Frank Keil shows that even young children demonstrate the ability to use heuristics (Lutz and Keil, 2002). Their study showed that children as young as three were able to employ schemata to correctly select either a car mechanic doll or a doctor doll in answering questions about observable behavior of members belonging to either profession. Additionally, the study shows that four and five year-olds can answer abstract questions that go beyond observable information to theoretical knowledge possessed by members of each career. Doctors were associated with biological knowledge and car mechanics were linked with knowledge of mechanical physics.[15] These experiments demonstrate that we begin forming and utilizing schemata in social interactions from a very young age, and these schemata are built by observing another's actions.

This demonstrates that observing people's actions can lead to an understanding of the extent of knowledge within the other's habitual body. We do not just see their movements, but the significance of these movements are informed by the knowledge we take them to possess. Norms appear in the same level of abstraction as theoretical knowledge. This realm of beliefs is directly accessible through people's actions in the sense that our interactions with others react according to the norms we take them to be responding to with their actions. For example, when you accidentally cut someone off and they blow their car horn, you do not have to reflect on the situation to understand that their mad at you. Just as we explore the physical world to determine occluded physical content, we explore socio-cultural content through our interpersonal interactions. By socializing with others, and meeting with their responses we learn societal norms and expectations. In the same way that actions of the doctor bring children

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15. When asked who would know more about animal or plant anatomy, the children selected the doctor. When asked which profession would know more about how elevators worked, they selected the auto mechanic.

into contact with the knowledge guiding their actions, peoples' actions and reactions demonstrate their understanding and adherence to norms and beliefs of the society in which they live. The above example from Lutz and Keil can be understood by extending Noë's enactive account. The REA demonstrates how perceivers achieve access to norms during interactions with others.

Cultural norms are as simple as holding a door for someone behind you, or knowing how far away to stand from other people in an elevator. Some interpersonal norms, however, are as complex as knowing when to respect a friend's privacy, and when an intrusion is essential for their health.[16] We directly experience social content in that the attractiveness of actions in given situations are constrained by social norms. Understanding social norms would be something like perceiving the underlying principles that select a specific range of actions. Our habituated endorsement of such principles is evidenced by the actions that we select. In some cases we reflectively form a belief and habituate it until it non-reflectively structures our perception. We can also unconsciously perceive and respond to norms, and when these beliefs are habituated non-reflectively we have implicit perceptual understanding.

These norms are shared by groups of people because of the similar actions undertaken in specific situations. The action alone does not tell us the significance of a person's expression. We understand the person executing the action, the behaviors of those around them, and the cultural norms at play in the situation—which are all present as absent. The notion of fragility in Noë's physical account sheds light on the fragility of social presence. In social presence, we directly access content that is far more complex than physical content. Our presence is fragile insofar as it is difficult to access present-as-absent physical or social objects in the world. In order to maintain presence, one must know the actions available to them given the demands of the social situation, and anticipate others' reactions in the setting. This means knowing what is expected *and* how to bring it about.

Importantly, the mode of our access to norms is direct, whether or not we successfully perceive and respond to these norms in social situations. In addition to physical cases, experiential blindness prevents accurate understanding in social situations. In such instances, people do not know how to enact their understanding

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16. Plenty of work has been done discussing the best options in such hard scenarios, but my project is only concerned with the extent to which these norms are accessible. The first concern is ethical, whereas my pursuit is more perceptual-epistemological.

to access that which is present as absent. There are many everyday situations where people do not know what responses a particular situation calls for. Social situations of experiential blindness may be misreading a person's response, or anticipating a different reaction than the one that occurred. For example, East Asian cultures place less of an emphasis on speech because they have a more collectivistic culture that values silence above verbosity (Kim, 2007). When an American interacts with a person from an Eastern Asian culture, the American may interpret the short responses of the East Asian person as unfriendly, and the Eastern Asian person may perceive the American as rude and overly talkative. This misunderstanding results from an inability to access the norms of the other's culture. Neither person means any offense to the other, but they do not have the cultural understanding to convey friendliness in their actions.

The REA demonstrates that accurate cultural understanding fills out our behavioral repertoire in a way that allows access to abstract social content. I take such social content to be cultural norms. The normative force of such norms is exerted by the reactions that others in society have to our actions. The significance of behaviors we enact is learned through social engagement and we understand the minds of those around us by their actions. Learning how to interact with others means understanding what knowledge and norms inform their actions. The fragility of such processes is evidenced by numerous everyday social misunderstandings. The REA not only demonstrates the direct access people have to each others' minds in social interactions, but also explains the fragility of socially achieved presence and the potential failures in social situations.

CONCLUSION

Heuristics are just one example of fragility in social engagements. Heuristics are used to more easily and quickly understand the other, but often result in generalization and stereotyping. Responsible perceivers are aware of when they are using heuristics and when applying such models is appropriate. The REA explains how heuristics and other causes of experiential blindness in social perception can be made transparent. The proposed structure suggests that failures to adhere to social norms and understand the other result from failures to achieve presence. Gaps in social understanding result from an incomplete tool set. Only interactions with those we do not currently have the means to understand help us develop the skills needed to understand them. Such repairs and additions to our skill set

result from a shift in focus to gaps in our understanding. We may be moved to repair our understanding for a variety of reasons, most likely it will be because understanding the other helps us to better navigate our world.[17]

I have shown that Noë's *Action in Perception* demonstrates that perception is an achievement, but does not address the ability to access social content in perceptual presence. By extending Noë's account to encompass social content, the REA can consider the achievement of social presence along the same lines as physical presence. This places the focus of achievement on active engagement with the environment and the other. Drawing upon Merleau-Ponty's notion of the habitual body I have shown how the mind is placed into the realm of directly accessible content and demonstrates autonomy of the individual in their level of pre-reflective self awareness when navigating their world. Autonomy is expressed in such cases because one's responses are habituated and further engrained with each action. The habitual body expresses the mind in action, and the mind can assign soliciting power to various affordances offered by the environment. The fact that such actions are mindful allows the agent to be held responsible for the style of enacted social presence.

Future development of this project may show its ability to explain how implicit and explicit biases pertaining to race, gender, or any other group arise from failure to achieve social presence. The same heuristics we use result in social misunderstandings on the soft end, and outright oppression on the severe end. Importantly, the REA holds the perceiver accountable for their social comportment. As a result, the various forms of failure introduced by schemata must be addressed by the individual and uncovered through social interactions.

Most of our social interactions occur without reflection, but not without thought. Our mind is present in how we perceive, and by habituating actions that adhere to the appropriate norms we can learn how to engage with the other. In the future, the REA may be applied to better understand how to revise social perception, and outline how social perceptual presence ought to be achieved. This project concludes having established that social content is directly accessed in a way that retains the autonomy of people interacting in social situations. Supporting these two points indicates that attempts to revise social presence

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17. An account of why we choose to reform our perception requires more focus on values and a fuller description of how normativity is present in perception. This may be another potential application for the material on emotions from footnote 4.

must focus on how we construct perception, and how the use of heuristics to understand the minds of others both facilitates and obscures our access.

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Logical Fatalism: Origins as Essential Properties of Events

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ABSTRACT

Logical fatalism is the belief that all events which occur do so necessarily, making the future necessarily fixed. I defend an argument in favor of this position against an attack Joseph Diekemper presents in his article "Temporal Necessity and Logical Fatalism." Diekemper argues that the fatalist argument in question rests on a faulty relationship between de dicto statements (truth statements about propositions) and de re statements (truth statements about objects). I argue Diekemper's attack confuses epistemological necessity and metaphysical necessity. In order to make this argument, I invoke a theory of origins of objects developed by Saul Kripke and apply it to events. I develop the idea that past and present events are origins of future events and that these origins are essential properties of future events. The invocation of origins as essential properties of events, I argue, also serves as a sufficient answer to the modal fallacy often charged against Aristotle's famous sea-battle argument. I conclude by restating the original logical fatalist argument with the addition of my development of origins as essential properties of events. By doing this, I show that the logical fatalist still presents a problem for anti-fatalists despite Diekemper's argument against it.

KEYWORDS

Logical Fatalism, Saul Kripke, Essential Properties, Determinism, Joseph Diekemper, Time, Temporal, Necessity, Contingency, Aristotle, Modal Fallacy

Logical fatalism is the belief that whatever happens could not have happened any other way. The view holds that future events are necessarily fixed and cannot be avoided. Joseph Diekemper, in his article "Temporal Necessity and Logical Fatalism," argues against a fatalist argument. First the fatalist argument assumes that past events are necessarily fixed (they cannot change). Then it assumes that it is presently time t2 and that the following proposition is true: "At t1 it was the case that at t3 event X will occur." As stated above, the past is necessary, and therefore this true proposition which regards the past is *necessarily* true. Since this necessarily true proposition about the past entails the occurrence of X at t3, it is also necessarily true at t2 that event X will happen at t3. Therefore, the logical fatalist claims, the future is fixed because true statements uttered in the past regarding the future are necessarily true. Diekemper not only attacks this argument, but he argues that a sincere fatalist is unlikely to make it because it rests on a faulty notion regarding the relationship between *propositions* about the necessity of an event and the *event itself*. For him, the purpose of critiquing this fatalist argument is to provide guidance for other anti-fatalists, encouraging them to shift their argumentative strategy. However, I argue that Diekemper is too quick to dismiss this argument. Indeed, his motivation to do so rests on a confusion between epistemological necessity and metaphysical necessity. Instead, I utilize a concept of origins as essential properties developed by Saul Kripke in *Naming and Necessity* to defend the logical fatalist argument. Essentially, my argument is as follows: for any event X, the past events which cause X to occur are essential properties of X. The existence of X requires the existence of its essential properties exactly as they actually do exist, or else X would not be X. Thus, since X's essential properties are necessary, and since X would not exist without said necessary properties, X occurs necessarily.

In order to debunk Diekemper's argument against fatalism, I must first explain exactly what his argument is. An event is an object insofar as it is a "state of affairs," as Diekemper puts it. For an event to come into existence is for an event to *occur*. For Diekemper, it seems impossible to make any meaningfully true statements about objects which do not exist and have never existed. The above fatalist argument, Diekemper claims, does not prove anything regarding the necessity of future events. Instead, it misconstrues the relationship between statements about *objects* and statements about *propositions*.The distinction between these two types of statements is known as the *de re/de dicto* distinction. *De re*

statements regard truth claims of objects; *de dicto* statements regard truth claims of propositions. An example of a *de re* claim is "Jeremy Morris wears a ponytail" (i.e., a claim about Jeremy Morris himself). This example's corresponding *de dicto* claim is "The proposition 'Jeremy Morris wears a ponytail' is true" (i.e., a claim about a *proposition* which regards Jeremy Morris). Diekemper points out that the above fatalist argument utilizes a *de dicto* statement about the past to prove the truth of a *de re* statement about the future. The following is a *de dicto* claim: "At t2, the statement 'at t1, it was necessary that at t3, event X will occur,' is true." Diekemper argues this *de dicto* claim is nonsensical because its corresponding *de re* claim has not been "actualised." In his own words, the state of affairs of event X "does not *occur* or become actualised at t1." Indeed, it is not until the event occurs at t3 that the *de dicto* claim about the statement made at t1 is made true. According to Diekemper, "temporal necessity *de dicto* only seems to apply - if it applies at all - derivatively, and in virtue of its *de re* application" (Diekemper 292). In short, it is the occurrence of event X at t3 - i.e., the existence of event X *de re* - which determines the truth value of the *de dicto* proposition. Thus, Diekemper says, the logical fatalist cannot use truth of the *de dicto* proposition regarding a future event to prove the necessary existence of said future event. It is the event's occurrence which makes the statement true, not the other way around.

Unfortunately for Diekemper, his argument rests on a confusion of epistemological necessity and metaphysical necessity. In order to illustrate how this confusion arises in his argument, I invoke Kripke's theory of origins as essential properties. By "essential property," I mean any property of an object that, without said property, would cause the object to cease existing. Kripke points out that an object can be discovered and referred to despite incomplete knowledge of the essential properties of said object. It is not the case that for all objects a person must know the essential properties of said object in order to successfully refer to it. Kripke provides the example of gold. People can refer to gold without knowing its essential property of containing the element with atomic number 79. Ignorance of said essential property does not make the property non-essential. Take the example of a particular glove. I point to the glove and say "Look at that glove," thus successfully referring to it. Upon further examination of the glove, I discover it is made of leather, making it a leather glove. The fact that the leather glove is made of leather is an essential property of this particular glove. Without the property of being made of leather, it would be a *different* glove altogether.

Now take this line of reasoning to its logical conclusion. Not only is it necessary that this particular glove be made of leather, but it is necessary that it be made of the leather it is actually made of. If the particular glove I refer to is made of leather made from cow skin derived from a cow in Wyoming, then any glove I refer to which is made of cow skin from a *different* cow in, say, Russia, would be a different glove entirely. Although I may not *know* the origins of the glove I refer to, the fact that there is a particular and unique glove I can refer to means there exists a glove with *particular and unique origins*. Herein lies the possibility of making an epistemological/metaphysical confusion of the same sort I believe Diekemper makes within his analysis of the logical fatalist argument above. Consider the statement "it is possible that the glove over there is made of cotton." Assume the person who utters this statement does not know and therefore has no belief as to what material this glove is made of. One can consider the speaker's statement as an expression containing *epistemological* ignorance. However, suppose it is discovered that the glove is actually made of leather. *Metaphysically,* since origins of an object are essential properties, it is *not* possible that this particular glove could have been made of cotton. Similarly, the statement "At t2, the statement 'at t1, event X will occur at t3' is necessarily true" is either metaphysically false or metaphysically true, regardless of one's ignorance regarding its truth value.

So, Diekemper mistakenly characterizes as metaphysically contingent the *de dicto* statement which claims that event X will occur and is made in the past. This mistake is made clear when the origins of event X are elicited. The existence of any event *as an object* is merely, as Diekemper puts it, an actualisation of a state of affairs. Put another way, it is the occurrence of an event which makes it exist as an object. The origins of any event X seem to me to be what *caused* event X to occur. For example, if one were to ask "What caused the birth of Don Juan," one could reply, "the fertilization of a certain egg as well as the carrying-out of certain biological functions, etc." Here it is made clear that what *causes* any event to occur is the occurrence of past events in a certain order. The state of affairs which caused "the publication of *Hamlet*" to occur was the conception by Shakespeare of a certain story at such and such a time, followed by the state of affairs known as "the writing of *Hamlet*," etc. Although the exact origins or causes of any event may be unknowable, the existence of such origins is inescapable. As Kripke illustrates, the origins of an object are essential to its existence. While discussing a particular table made of wood, he asks, "What, then, does the intuition that the table might

have turned out to have been made of ice or anything else, that it might even have turned out not to be made of molecules, amount to? I think that it means simply that there might have been *a table* looking and feeling just like this one and placed in this very position in the room, which was in fact made of ice" (Kripke 142). In the same way, if any different causal chain of events had actually occurred leading up to the point in time of event X occurring, then it would not have been *event X* which ended up existing, but instead *an* event. Thus it is established that if event X exists, then its causes must necessarily exist in the way they actually do. Since the causes of event X are past events, then the past must be fixed. Thus, the statement made at t2, "At t1, it was true that at t3, event X will occur" *is* either true or false. The occurrence of event X is not necessary to determine the *de dicto* statement's truth value. Another way of putting it:

1. Any object which is unique must have unique origins.

2. Every event is a unique object (an actualised state of affairs).

3. Every event has unique origins (from 1, 2).

4. The unique origins of an event are the objects and processes which cause the event to occur.

5. The objects and processes which cause an event to occur is its causal history of past events.

6. For any unique object which exists, the existence of its essential properties is necessary (because without the existence of said properties, the object would no longer exist).

7. The origins of a unique object are included as part of its essential properties.

8. The existence of any event requires the existence of its origins (past events) necessarily.

9. Particular unique events exist.

10. Thus, the past is necessarily fixed (from 8, 9).

Since past events are necessarily fixed, the *de dicto* statement made at t2, "At t1, it is the case that event X will occur at t3" is either necessarily true or necessarily false. The occurrence of event X at t3 is not necessary to metaphysically determine the statement's truth value, but it is what allows for the *discovery* of the *de dicto* statement's truth value (this discovery represents what Kripke would call a "necessary *a posteriori*" fact).

Think of what it would take for the *de dicto* statement in question to be true *before* t3. It would have to be the case that at t1, a state of affairs exists which will eventually allow for event X to occur. The occurrence of event X requires a certain set of unique essential properties to exist, and these properties will either include the state of affairs at t1 or they will not. Suppose the occurrence of event X *does* require the state of affairs at t1 to exist. At this point, it seems possible that the state of affairs at t1 could produce *multiple* different causal chains which may or may not lead to the occurrence of event X. Perhaps at t1 there are multiple logically consistent ways for the causal chain of history to proceed, some of which will cause event X to occur at t3, and some of which will not. Whichever way the causal chain of history proceeds may be left up to a numerical probability. Well, if this is the case, then how is any probability actualized? For the sake of this example, presume the probabilities of each possible course of action are equal with one another. How, then, does any option actually become part of the causal chain of history? If one answers, "it is pure luck. No matter which option wins out, it does not negate the fact that the other options also had a meaningfully real chance of happening," then I am left asking, "Well, what were the circumstances that allowed one option to be 'more lucky' than the others?" If one accepts that each effect has a cause, then the result of every instance of temporal probability must have a cause. One might say, "well, any of the probable outcomes could have happened, and they all would have been caused by the same previous chain of events; it's just that only one option was *actually* caused by this chain." To which I reply, "Well, if all the possible outcomes could have been caused by the same chain of events, yet only one outcome *was* caused by this chain, does that not entail the existence of some other aspect of the existing state of affairs which would produce one outcome and exclude others?" What I mean to say

is, the existence of any state of affairs at the expense of another state of affairs seems to imply a causal circumstance which produced the *actually* existing event as opposed to the *possibly* existing events. And again, once an actually existing object is discovered, one can inquire into its essential properties, such as its origins. No matter what "probabilities" may have existed at one point in time, the fact of an actually existing event implies the existence of some cause which allowed *that* event to exist instead of another. Whatever this cause is, it must belong to the event's essential properties because, evidently, if this cause did not exist, neither would the event. This cause, whether it be an event, another object, a relationship, or etc., is part of the state of affairs/causal historical chain which are all part of the event's origins. These origins, including the one which produced one "probability" over another, are all fixed in the past, and thus they produce fixed outcomes.

Before I conclude, I will address a criticism of my argument which I received at the 2016 Michigan Undergraduate Philosophy Conference. Essentially, an audience member suggested my argument may commit a fallacy similar to the one Aristotle's sea-battle argument is often accused of making. The fallacy is often called the "modal fallacy." In logical language, the modal fallacy is an instance of an unwarranted application of the necessity operator. The article entitled "Fatalism" from the Standford Encyclopedia of Philosophy presents a version of Aristotle's sea-battle argument:

> Suppose that (i) *p* is true or *p* is false and (ii) not-*p* is true or not-*p*

> is false.

> Then *p* is true or not-*p* is true.

> Now suppose that in 1900 one person says that a sea-battle will take place on 1/1/2100, and another says that a sea-battle will not take place on 1/1/2100.

> Then either what the first person says is true or what the second person says is true.

But, in that case, either it is necessary in 1900 that a sea-battle takes place on 1/1/2100, or it is necessary in 1900 that one does not take place.

But the date of the predictions is irrelevant, and it is irrelevant whether any prediction is actually made at all.

So it is necessary at all times that a sea-battle takes place on 1/1/2100, or that a sea-battle does not take place on 1/1/2100.

But the argument can evidently be generalised.

So, everything that happens, happens of necessity.

The misplacement of necessity Aristotle is accused of: the move from claiming that it is true that someone says "a sea-battle will take place on 1/1/2100," to claiming to be also *necessarily* true. Essentially, the modal fallacy asserts that there is no reason to think the true statement (whichever one it is) is true *of necessity*. Another way of putting it: just because one of the two statements will become true in 2100 does not mean that either is necessarily true; it is *not* necessary that either the sea-battle will or the sea-battle will not take place in 2100. However, the entire purpose of my argument is to prove that there *is* reason to think the statements made in the past - as well as the future event it mentions - are either true or false of necessity. As explained above, if all states of affairs are caused by previous states of affairs, and if previous states of affairs are fixed, then it follows that the events caused by past events are also fixed. The argument that a set of events can cause multiple different events is false because, as I argued above, the actualization of one of many "possible" events implies the existence of some other cause that caused the actualized state of affairs to exist. This other cause can be considered one of the event's origins and hence one of its essential properties. Given that the origins of event X exist in a fixed way, and given that a different set of origins would need to exist for a different event to exist in place of event X, it follows that if event X exists, then it does so necessarily. Therefore, instead of committing a modal fallacy, my argument takes the question raised by a modal fallacy accusation and answers it.

In conclusion, Diekemper too quickly discards the logical fatalist argument in question. What this fatalist argument really boils down to is this: *events contain essential properties such as origins. These origins are past events. Without the existence of these past events as is, any actually existing event caused by them would not exist. One can say "At t2, the statement 'at t1, it was the case that at t3, event X will happen' is true." If this* de dicto *statement is true, then it is true because of a current state of affairs which will necessitate the occurrence of event X. Since the statement about t3 made at t1 is necessarily true or false, so is the occurrence of event X. The same can be said for any future event, and therefore the future is fixed.* Unless an anti-fatalist can explain how an event's existence can be said to be contingent despite being caused by necessarily fixed events, then the argument Diekemper attempts to do away with still presents a problem.

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Cognitive Theories of Emotion: Conceptualizing Pain and Suffering

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ABSTRACT

This paper discusses two major cognitive theories of emotion, the conceptual act theory (CAT) and the basic emotion theory (BET). According to CAT, emotions are conceptual categories, and particular experiences of these emotions are tailored to the environment. BET suggests that an emotion like sadness arises from an innate brain network that is similar in all people, though there is some variability in emotional states that fall under the umbrella of sadness. The objective of this paper is to argue that CAT is better suited to conceptualize pain and suffering, because it recognizes that environmental cultural factors play an important role in creating emotional experiences. CAT asserts that memories and cultural norms significantly influence individuals' experience of an emotion like sadness. This idea implies that two individuals' experiences of sadness and other emotions might be very different from one another. Therefore, the proper way to conceptualize pain and suffering is as an individual-specific emotional state, which is strongly influenced by events from the individual's past and his or her cultural context. Pursuing CAT with further studies may yield evidence for a neurological basis for subjective character of experience. CAT may also have implications for how professionals approach treatment of mental illnesses that deal with emotions of pain and suffering, such as depression and anxiety.

There are two major contemporary cognitive theories of emotion, both of which have a large base of support in the scientific community. The fundamental philosophical argument between the Basic Emotions theory (BET) and the Conceptual Act theory (CAT) is one between nativism and empiricism of emotions respectively. Nativism is the belief that knowledge, in this case, much of individuals' capacity to experience emotion, is wired in from birth and is only somewhat shaped by experience (Markie 2015). Empiricism is the view that concepts originate in experience, in this case that individuals' capacity to feel emotions is built through their experiences and changes over time (Markie 2015). This paper will argue the more established BET is not as helpful for conceptualizing pain and suffering in the human experience as the newer CAT.

INTRODUCTION TO BET

BET asserts that there is a small number of basic emotions, and all people have a very similar physical, neurological, and psychological experience of these emotions. On this basis, scientists search for corresponding "distinctive features of each emotion," including changes in expression (Ekman 1999, 50). BET posits that these distinctive features are evidence "there must be *unique* physiological patterns for each emotion, and these CNS patterns should be specific to these emotions not found in other mental activity" (Ekman 1999, 50). The goal of BET is to identify physical events that distinguish one emotion from another. In this view, emotions are thought to be basic mental faculties that are, to a degree, biologically and psychologically primitive, as they primarily serve "to mobilize the organism to deal with important interpersonal encounters" based largely on "what has been adaptive in the past history of our species" (Ekman 1999, 46). BET "emphasizes the past history of the species" over the past history of the individual in shaping neural circuitry involved in emotion-related behavior (Ekman 1999, 49). BET theorists have attempted, with limited success, to find emotion-specific activity in the autonomic nervous system across individuals, which would imply that emotions innately lead to consistent patterns of motor activity in different individuals (Ekman 1999, 49).

The BET approach assumes emotions to be universal neurological and physical states with minor individual variations. On the other hand, CAT treats emotions as abstract categories that are populated with variable instances (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). Each instance is the experience of an

emotion at a specific time. The experience of an emotion includes a mental state and physical response.

INTRODUCTION TO CAT

CAT asserts that emotional experiences are variable, because physical responses that accompany a mental state are dependent on the context, culture, and past learning or experience of the individual. The role of this conceptual information in the formation of emotion is emphasized more in CAT than in BET, because of BET's focus on the evolutionary origin of emotions (Ekman 1999, 49). According to CAT, the brain is a mental state generator, producing individual brain states of neural activity that correspond to each individual experience of an emotion (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). In this theory, the specific emotional experiences within each category of emotions, for example all experiences of sadness, do not necessarily share one neural network. Rather, CAT argues that emotional experiences arise from the interaction of core systems in the brain (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). These core systems are not solely dedicated to the processing of emotions, which makes them different from the hypothesized neural systems in BET. These core systems are brain networks and also psychological systems (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86).

COMPARISON OF THEORIES

BET seeks to reduce emotions to specific, consistent neural and physiological reactions to stimuli. CAT seeks to analyze how mental states emerge from the interaction of core systems during an individual instance and does not seek to reduce emotional experiences into specific patterns of neural activity. Like BET, CAT acknowledges that emotions serve a function. While BET focuses on an evolved response, adaptive because it drives the individual towards or away from various stimuli in ways that influence survival and reproduction, CAT acknowledges a lot more general adaptiveness in the emotional system. Under CAT, emotional experiences are more specific to an individual's environment, culture, and past. CAT offers a more detailed explanation of culture's ability to shape behavioral responses to emotions and possibly the experiences of emotions themselves. Because CAT takes an individual's past experiences into account in the formation of emotion to a greater degree than BET, it is better able to account for variation

in complex social emotions, given that social emotions cannot exist without experience of knowing other people.

Shame, for example, is a social emotion that depends on experience and culture. Individuals must be informed by past experience to know whether or not their circumstances would elicit a negative reaction from the surrounding community and to experience shame as a result. Much of the evidence behind BET is based on cross-cultural studies of facial expressions. Many proponents of BET claim that since people of virtually all cultures smile when happy, they must have a common neural network creating a common mental state and emotional experience every time any person experiences happiness. What BET fails to address, as the name implies, are complex emotions, some of which have facial expressions that are not so consistent cross-culturally. This is particularly true of social emotions. According to the Stanford Encyclopedia of Philosophy, "new [facial] expressions can be cultivated culturally" (Prinz 2011). For example, "There is evidence that tongue biting is used by women to express shame in parts of India," however that is not a facial expression one would use to express shame in the United States (Prinz 2011). Culturally coded expressions of emotion can be much better explained by CAT, which includes past experience as a component in creating an individual's emotional experiences. As a reminder, emotional experiences include both the mental state and physical response of the individual to a situation. So in this example, it includes the psychological feeling of shame and the physical response of the tongue-biting facial expression.

Another shortcoming of BET is that it does not acknowledge any neural basis for subjective differences in an individual's emotional experiences, and writes subjective experience off as "no easy matter to assess" in any manner beyond questionnaires (Ekman 1999, 55). BET leaves unanswered the question of what neural mechanism causes the difference between sadness an individual feels after watching a sad movie and following the loss of a family pet, and fails to acknowledge tangible subjective difference beyond "simply the amount of positive or negative emotion" (Ekman 1999, 55). One possible way in which BET attempts to address this subjectivity is through the idea of emotion families (Ekman 1999, 55). Each family is an emotional "theme" guided by evolution, and the individual affective states within each theme reflect learning (Ekman 1999, 55). While this is possible, there is no known neural evidence for how many emotion families there are let alone whether or not they are consistently similar neural networks

in individuals cross-culturally (Ekman 1999, 55). CAT employs a similar idea but regards emotions as abstract categories rather than anatomically-constrained general pathways (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). This approach allows for more flexibility and potential for difference in the patterns of neural activity and resulting experience of emotions between individuals.

PHILOSOPHICAL IMPLICATIONS

Recall that nativism in this case is the belief that capacity to feel emotions is determined at birth and is unchangeable and that empiricism is the belief that emotional capacity is dependent on experience. Using BET to conceptualize pain and suffering is a very nativist argument, suggesting that people are all born with the capacity to feel pain in the same way as other people and that this capacity does not change significantly throughout life, regardless of life experiences. The basic emotion theory treats emotional knowledge and capacity as largely *a priori*.

This is flawed, because if people were only able to feel pain and sadness in one way, given that BET does not provide basis for subjective differences in emotional experiences, there would be no different types of pain. The emotions accompanying physical injury would be the same as those that arise when someone opens a rejection letter or a disappointing birthday present. Additionally, many components of pain and sadness are social emotions, which cannot be truly understood without acknowledging a role for past social experience in the construction of emotional experiences. For example, pain from receiving a rejection letter may be accompanied by jealousy towards people accepted to the same program. BET accounts for jealousy not as an emotional state, but as an emotional plot, which is a specific context in which more than one basic emotion can be expected to occur (Ekman 1999, 55). In this same example, the CAT approach would assert that multiple core systems are working together to create a unique emotional experience rather than multiple concurrent other emotions (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). These core systems would take into account individual-specific experiences, such as memories of the individual's experiences that constituted their qualifications for the program as well as memories of interactions with the people who were accepted to the program. This better expresses the human experience, because it acknowledges the full range of possible emotional states experienced in the realm of pain and suffering.

Using CAT to conceptualize pain and suffering is a more empiricist viewpoint. It argues for emotional intelligence building *a posteriori*, meaning that it integrates learning from experience into our abilities to experience emotions. This is preferable for conceptualizing pain and suffering, because it acknowledges the different situations of pain, betrayal, and loss people encounter in their individual lives and respects the uniqueness of each individual's experience. It allows for expressions of unique emotions through storytelling, which has been observed cross-culturally in oral tradition and telling of fables.

Today, authors, movie directors, and other artists tell stories of emotions, often of pain and loss. In BET, those stories and emotions lose all of their subjective character. This theory does not acknowledge the difference in emotion that a reader would feel for the death of a well-developed and relatable character in a novel over the emotion one would feel for a minor character meeting the same fate. Thus BET fails to explain why people relate well to main characters of novels and movies and grow emotionally attached to them. In pop culture, this phenomenon is evidenced by fan clubs and fan fiction centered on specific characters.

Adopting the CAT's construction of emotional experiences, which are experience-inclusive and individual-specific, opens up discussions about the subjective nature of experience and the uniqueness of different individuals' realities in the arena of cognitive science. CAT is the closest thing we have to a neural basis for the "subjective character" of experience, as Thomas Nagel defined it in "What is it Like to be a Bat?". Nagel argues that reductionism, reducing subjective human experiences to neural events, does not recognize the subjective character, or what it is like to be an individual having an experience (Nagel 1974, 435). For example, what it is like to be a person when they are experiencing an emotion of sadness or pain is the subjective character of their experience. While Nagel argues that this subjective character is completely separate from brain activity (Nagel 1974, 438), the conceptual act approach shows that subjective experience can be understood through brain activity: by the holistic interaction of different core systems of the brain that are involved in all aspects of experience (Barrett, Wilson-Mendenhall, and Barsalou 2014, 86). CAT does not restrict emotional processing to domain-specific areas of the brain, meaning brain areas solely dedicated to processing of emotions, so it opens up the possibility of neurological backing for the subjective character of experiences.

This cognitive theory argues that there is something unique about being an individual experiencing pain and suffering as compared to another individual experiencing those emotions. The idea of experience being subjective person-to-person allows for a much more developed concept of self with neurological backing than BET does. While Nagel argues that a subjective experience is separate from the corresponding neural events that accompany it, CAT can actually provide evidence that subjective experience and neural activity are intertwined. CAT brings together these two disparate ideas by showing that the subjective character of experiences has a unique pattern of neural activation in each instance.

An easy way to think about this is to think of two people in a brain scanner. Each is eating a piece of strawberry cake. One person has strong fond memories of eating strawberries with their family while the other does not. CAT would anticipate that networks in the hypothalamus associated with hunger satiation would be active in both brains. However, activity would be different in the brain of the person with the strawberry-related memories, because brain areas involving those memories would be active and play a role in how the person feels while eating the cake in the scanner.

That means that according to CAT, when a person has an emotional experience, for example sadness, it is not just a specific center in the brain that lights up a similar way every time they experience sadness. Instead, there are interacting pathways in the brain that are connected to memories and learned cultural norms that create unique patterns of neural activity each time an individual experiences sadness. The uniqueness of these patterns implies a unique subjective experience for each individual, which builds upon itself as memories of past emotional experiences are added to the interacting networks that create new emotional experiences. Further, it is highly likely that some of the memories and norms involved in creating each emotional experience provide a sense of self or identity when individuals make decisions based on a foundation of experiences unique to them. This could imply a unique consciousness in each person.

CAT also opens up discussion on qualia, the introspectively accessible, phenomenal aspects of our mental lives. Philosophers use the term qualia to describe what it is *like* to subjectively experience something (Tye 1997). According to the Stanford Encyclopedia of Philosophy, disagreement typically centers on which mental states have qualia and how qualia relate to the physical world

inside and outside the head (Tye 1997). CAT provides the first neurological basis for qualia. This may provide a scientific basis for researching qualia using brain imaging, though such research will likely only take place far in the future.

CAT also supports David Hume's idea of knowledge being grounded in experience. Hume argues that experiences create our knowledge in the form of thoughts or ideas. These ideas come from the recollection of impressions, which are an individual's affective responses to his or her environment (Hume (1888) 1966, I.V.IV). According to CAT, emotional experiences are like impressions in that they can be uniquely experienced but not necessarily articulated by the individual. These form memories, which inform future emotions.

SUMMARY AND PRACTICAL IMPLICATIONS

There are practical implications for CAT in patient care, especially for people struggling with mental illnesses. CAT points to a different neural basis of negative emotional experiences in different people. This means that psychiatric drugs that target specific brain regions or networks may not be effective for all people or could only address part of the problem. This could help explain why the most effective treatment for depression and anxiety is often a combination of psychiatric drugs and psychotherapy (Martensson and Spigset 1999, 102). The psychotherapy can help address subjective negative emotional experiences, which are not the same in all patients but could be having a neurological effect. More widespread support for CAT would likely help psychiatric care to move even further away from a one-size-fits-all method.

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compos mentis

Responsibility: Revis(ion)ing Brains via Cognitive Enhancement

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ABSTRACT

In this paper, I will explore the unique ethical issues attendant to cognitive enhancement, which is the augmentation of one's intellectual ability via medicine or various methods of therapy, especially transcranial direct current stimulation (tDCS). I start by introducing tDCS and noting its rise in popularity, along with its growing fervor in the DIY community. I then review and expand on some of Dr. Anjan Chatterjee's concerns regarding "cosmetic neurology," including, but not limited to, whether cognitive enhancement is worth the potential risks, and the question of if we have the ability to enhance, should we enhance, as well as if—through the use of cognitive therapy—we could be "altering an individual" and "eroding their character." I delve further into the personal realm with the unique perspective of a first generation student and additional cross-cultural considerations. I will begin by exploring issues of physical safety and efficacy. To this end, I will review some experiments done with adults and children using tDCS—though their results lend credibility to tDCS not having significant enduring effects, I cite Dr. Martha Farah's work regarding why these studies' results may be inaccurate and why further studies are needed to accurately view the efficacy of tDCS. Next, I will discuss some non-physical harms such as threats to autonomy and authenticity. Following the Maslen model, I question whose responsibility it is to allow enhancement (and at what age), under which circumstances, and when can its use be justified. I broach questions such as 'if someone is chronically on a drug, are they still the same person making the same choices they would normally' and whether their 'quality of life would be better post enhancement?' Finally, I ponder tensions between coercion and responsibility: if the stakes are too high and if, in the competitive culture today, not using some type of cognitive enhancement may be detrimental to a child's success. Thus, it could be conceived a parental responsibility to enhance their child.

KEYWORDS

Cognitive Enhancement, tDCS, Noninvasive Brain Stimulation, Authenticity, Safety, Responsibility, Implicit Coercion, Open Futures, Cosmetic Neurology, Treatment

I'm here today to tell you about an incredible opportunity that has many implications for the near future. While this opportunity has a wide range of ethical issues surrounding it, it has the potential to transform our lives for the better and this opportunity is termed cognitive enhancement. There are several forms of cognitive enhancement you may have heard of, including the pill form—mainly Ritalin, Adderall, and Vyvanse (Farah 2015, 379-380). Other forms of cognitive enhancement include tRNS (transcranial random noise stimulation) and the most notable form of electric stimulation is transcranial direct current stimulation also known as tDCS. tDCS is a noninvasive brain stimulation that is becoming increasingly popular since it uses only about 1 milliamp electric current to stimulate specific regions of the brain to excite neuronal activity and generate mental sparks—figuratively—if you're doing it right (Sarkar et al. 2016)! It's not only available to buy as cheap as $50, but there's also videos of college kids on youtube zapping themselves and a robust Reddit community with their do-it-yourself tDCS, which consists of two sponges hooked up to a 9 V battery!

I'm going to tell you what tDCS is and you're going to be shocked and ask me- what? that's incredible! why are we not doing this at this very moment, and I'm going to ask you to keep in mind three ethical issues: 1- safety, 2- responsibility, and 3- authenticity. But there is a lot of literature out there on adult studies, so I'm going to hone in on cognitive enhancement with the focus being the child.

Most every parent wants his child to grow up and be successful, whether that's a teacher, the next gen Mark Zuckerberg, or a neurosurgeon. That was especially true in my case, as a first generation student in America. When I was two, my parents came to the United States, "the land of opportunity," seeking the success that they had only heard about in India. I grew up hearing their stories of hardship when they first moved here with an infant, without a car, and very little working English. I witnessed them struggle tirelessly to make a life for themselves and they always said that *without education you are nothing and will be no one*. As a child, while my friends would go to sleepovers and camping trips with friends, my dad would spend time checking my math problems on the white board at home and my mom would make me spell 50 words correctly every night. But even with all that pressure, I never had the best GPA, I had to work pretty hard to stay on top of my classes, and I always fell short of their expectations. So given the opportunity, would my parents have tried to enhance my cognitive ability?

The question then becomes, to enhance or not to enhance. Dr. Anjan Chatterjee, a professor of Neurology at UPenn, asks, "If we have the ability to make brains better, should we do so when there is no acute 'disease?'" He calls such enhancement administered by the neurologist "cosmetic neurology" (Chatterjee 2004, 968–974). By definition, "enhancement" is a moving target so we usually characterize that which is in need of treatment is known as disease, whereas that which is only *modified* is known as enhancement. There has been much debate concerning the line between therapy and enhancement and whether enhancements go beyond the purpose of medicine (Chatterjee 2004, 968–974). However, medicine *does* include treatments that are not necessarily intended to cure or prevent illness. For example, plastic surgery and contraceptive medications are allowed, though they are not *treating* anything per se. On the other hand, there are also many "enhancements" that have no proven medicinal value, like dieting pills and energy drinks.

So going back to our three ethical issues with cognitive enhancement, we see that the first, and perhaps most obvious concern, is safety. Though over 10,000 trials of tDCS testing cognitive improvement in adults have been performed safely, because it is such a new field, little is known as to the long term effects (Fregni et al. 2015, 22-35). Moreover, the effects of tDCS (like improved memory and concentration) are relatively short lasting, so it must be applied repeatedly to have a significant effect (see Kincses, Tamás Z.et al. 2004 and Fregni, Felipe, et al. 2005). Some might suggest that the reversibility of the effects, or shortlasting nature of the effects, make the device relatively safe, but who knows if we're doing more harm than good when these devices are used in healthy individuals with repeated use. Even greater concerns for safety come into play when considering how such use impacts the developing brains of adolescents and young adults (Moliadze et al. 2013). On the other hand, tDCS has been shown as a potential effective therapy in the case of depression, anorexia, dysphagia and even stroke treatment (see, for example, Palm, Ulrich, et al. 2009, Pisegna et al. 2016, Kekic et al. 2016). Its potential uses are for applications in clinics and for enhancement of multiple domains of brain function in healthy individuals. Dr. Chatterjee notes that "in disease states one weighs risks [like death] against potential benefits," but he asks whether enhancement is worth the risk in healthy patients who simply wish to become even better (Chatterjee 2004, 968–974).

Dr. Martha Farah, a renowned cognitive neuroscientist, notes that much of the research currently published on existing *pharmacological* enhancers may need to be taken with a grain of salt, because a) enhancement outcomes *in laboratory experiments* differ based on biological and psychological traits of the user, and b) many studies used small sample sizes that could have easily led to false conclusions. Hence, there is variability when calculating its effectiveness. This is also the case with tDCS (Farah 2015).

One study done by Dr. Kadosh, an acclaimed neuroscientist at the University of Oxford, studied the effects of applying tDCS over one week (Kadosh, Roi, et al. 2010). They "electrically stimulated 19 adult participants as they learned a new numerical system by trial and error." They asked the participants to figure out a new numerical system by asking them to pick the higher numbers when stimuli came on the computer screen, where a cylinder might represent the number 5 and a triangle would represent 9. 'All participants wore electrodes on their scalp during these training sessions.' One group received electrical stimulation to the posterior parietal cortex, which is involved in numerical cognition. Another group received stimulation of the dorsolateral prefrontal cortex, which is involved in learning and working memory. "A third group received sham stimulation that caused a slight tingling of the skin but no change in brain activity." At the end of this weeklong study when all participants were given a final *new* task, they found that those whose parietal areas had been stimulated learned the numerical system the *most quickly* but their *reaction times were slowest* when applying that information to a new task. On the other hand, those who received stimulation to their prefrontal area were *slowest* in learning the new system, but performed "*faster* on the new task at the end of the experiment." Thus, at least in this case, there were both benefits and some drawbacks to receiving electric stimulation (Kadosh, Roi, et al. 2010).

Even less is known about effects on children and there are a limited number of experiments indicating potential success (Maslen et al. 2014). In one London-based experiment, 12 children with mathematical learning disabilities were given nine 20-minute training sessions, 6 of whom wore the cap (but did not receive stimulation) while the other 6 received transcranial random-noise simulation (tRNS), which is a newer transcranial stimulation method that utilizes a randomly varied current. When put in a video game simulation "the children moved their bodies from side to side to guide a ball on a screen to land at a certain point on a

number line, with the difficulty increasing as they progressed." Results indicated that "children who received stimulation showed greater progress in performance [and reached a 20% higher level on the game] than did the controls" (Geddes 2015, 436-437). This, in turn, leads to another argument regarding benefits versus efficacy. The way we test efficacy in laboratory experiments is by having subjects answer a set of carefully calculated questions or having them perform a specific video game task, but how do we know if those effects are more broadly generalizable to everyday skills, like reading comprehension and test taking? It turns out that in the particular study above, when those same 12 children with mathematical learning disabilities were given a general math exam, they did in fact show significant improvements in general mathematics test scores, but who is to say this is not an exception, and that it was the *tRNS* that was responsible for improving math scores (Geddes 2015, 436-437)? If given a reading comprehension test would they do significantly better than they normally do? The answer is maybe, but we don't know yet.

Now let me ask you this. By not taking advantage of such enhancing technologies will we get left behind? Is it a parental responsibility to enhance their children? Won't we as parents (one-day), want the best for our children? Dr. Hannah Maslen in the UK, delves more into this and argues that because such intervention may include "compensatory trade-offs" or functional cognitive losses, more emphasis should be placed on parent's judgment *if* the child has a neurological disease and needs treatment. However, *in absence of disease*, then more weight should be placed on protecting the child's autonomy, since one cannot justify the need for and intervention that would not treat a disease but was for the purpose of enhancement (Maslen et al. 2014). But how do you know a child would have wanted enhancement in the first place? At age 10 is she equipped with the information necessary to make such decisions with profound impacts? I know I sure wasn't as a 10 year old. I remember struggling to pick which ice cream I wanted when the ice cream truck drove around the block. Say the child took the opportunity and turned out successful—would she be glad she received enhancement?

The most noteworthy argument here is that children have is what bioethicists often call "a right to an open future." The principle holds that children have certain rights that they can't exercise yet, but they will be able to exercise when they reach maturity. Thus, parents should not take actions that permanently exclude

or prevent the future options of their children, but they should leave them the greatest possible scope for exercising personal life choices in adulthood (Millum 2014, 522-538). To underscore this argument in natural terms, if a parent enrolls their child in French lessons for 8 years, while that child always wanted to learn piano, she 'wasted' that time learning French when she could have excelled in piano. If we take it a step further and say the parents had administered tDCS when the child was younger, such that she grew into a genius at math, but by high school she realized she wanted to be an artist when she grows up, the tDCS may have diminished that creative side of her. And the child wouldn't have so much of an open future ahead of her.

When considering whose responsibility it is to decide if a child should be enhanced, there lies *another* question that's becoming increasingly difficult to answer. Is the decision actually a choice or is it implicit coercion? One perspective on that thought is if little Jimmy is functioning at an average level but you the parent, want him to excel in all his classes with the hope that he can one day go to Stanford, as is the family tradition-- do you enhance him? In this case, does enhancing the child violate the child's right to an open future or does it facilitate an opportunity for a better one?

The other perception is that in the competitive culture today, parents might feel the need to utilize any intervention they can to improve their child's chance of succeeding, particularly when they feel they already have brought their child into a world disadvantaged. In this case, perhaps the parent feels there is no choice, they *must* enhance their child.

Another question worth noting is whether employers will begin demanding the same for their employees. Already, air force pilots are required (and some residents are encouraged) to take Modafinil, a stimulant originally intended to treat narcolepsy and sleep disorders. If the work force continuously demands excellence of its employees, why not expand that and take a form of cognitive enhancement, since certain forms (mainly the pills) can make employees in all fields less prone to error, able to work and concentrate for longer hours, and operate more efficiently (Bostrom and Sandberg 2009, 311-341)! If surgeons and restaurant employees are "coerced" to wash their hands and follow other protocol, this step may not be all that far away.

That brings us to our final ethical issue with cognitive enhancement— that of authenticity: whether the child would be the same person, at the end of the day or

whether "such interventions threaten essential characteristics of what it means to be human" (Chatterjee 2004, 968–974) . If we do modify a person's baseline state or prescribe drugs, then aren't we fundamentally altering a person and keeping them from being who they are, *or* are we instead enabling them to become their best selves? When someone is persistently on a drug or undergoing tDCS, who is to say they would make different decisions if they weren't always on said drug or stimulant? If we believe, as Aristotle says, that our actions define us, then how do we know that we are not, in fact, slowly changing the person and *not just* their temperament or their personality? I personally think that prolonged use of a drug does change a person. Take, for example, the case of antidepressants, which are known to protect people from the adverse effects of stress. The prolonged use of antidepressants could cause someone to make different decisions than they normally might have when they felt stress. If these different decisions lead to different actions, then yes, I think you are altering a person by prescribing them a chronic drug. Others, however, do not share my opinion. In a qualitative case study done by interviewing parents of children with and without cognitive disabilities, it was found that some parents actually justified their child's use of [ADHD] medication and felt that the "drugs were facilitating the expression of their child's identity, not changing it" (Ball and Wolbring, 2014, 345–364). In yet another study, done by Dr. Ilina Singh, who is famous for her work with kids with ADHD, she found that kids in the UK mainly reported that they take Ritalin so they can manage anger and bad behaviors but kids in US reported that they take Ritalin to be more productive and improve academic performance (Singh 2014, 237-240).

Another commonly held perception is that enhancements just augment people's existing capabilities, so they may enable them to lead a more "authentic life" and reach their full potential (Chatterjee 2004, 968–974). For some, however, the concern is that "natural" excellence is worth more than bought talents, which are less admirable. Additionally, if there are shortcuts to excellence, then access to those shortcuts is what determines success or failures, not one's inherent hard work. Moreover, some shortcuts in our society are completely acceptable. For example, it can be argued that performance enhancing athletic shoes and the use of calculators in high school physics promote authenticity by allowing a person to concentrate on more complex challenges that relate to goals rather than spending time developing thick soles or trudging through algebra. But that, then leads us

to wonder if taking enhancements is cheating (Bostrom and Sandberg 2009, 311-341).

According to Dr. Nick Bostrom, whether something is considered cheating is dependent on the context and the rules. "If school is regarded as a competition for grades, then enhancers are considered cheating because not everyone has access to such enhancement. However, if school is seen as being significantly about acquisition of information, knowledge, and learning, then cognitive enhancements may be legitimate and useful" (Bostrom and Sandberg 2009, 311-341).

But I grew up in a culture where short cuts weren't accepted. As a first generation student in America, I used to always question why I received so much pressure from my parents. Now, I realize it's because they just want me to succeed and to not have to struggle the way they did just to put food on the table, so pushing me to succeed in academics was their utmost priority. They knew I wasn't the brightest Crayon in the box, but given the chance, would they have considered cognitive enhancement?

I asked my parents if they would have done so and somewhat surprisingly, they said no. At first they agreed with each other, and said there's always the risk of further complications and you potentially risk more than you can gain. Moreover, they noted that since I didn't have any known diagnosed cognitive deficits or explicit neurological disorders, then no, they would not go for it because it wouldn't be "worth it." Finally, my mom stated that every parent's main wish is that their kids just be safe and happy, and that academic success was only a means to achieve happiness. She would never do anything to threaten that by giving me enhancements even if it means having an "ordinary" daughter when she wanted an extraordinary one, because to her, I am extraordinary.

So now I've told you about the possible benefits of cognitive enhancements and the three main ethical issues most frequently raised with it. Now I want to ask you, if you were a parent raising a child in the competitive culture today, would you allow your child to be cognitively enhanced? Wouldn't you give them any advantage you possibly could to succeed? Is that true for yourself—if you have the chance to do so, would YOU do it? If you close your eyes, can you imagine a generation where everyone, from artists to students and surgeons, is performing at their utmost capacity? Can you imagine everyone with tDCS "thinking caps?" Is this where we are headed?

DISCUSSION

One fascinating question that fellow Emory University student, Lokita Rajan, brought up was whether the use of calculators could be considered a form of coercion. She astutely noted that teachers frequently write exams assuming that students use calculators on math or science exams, and that the time frame allowed for the test assumes the use of a calculator. However, in doing so, are they taking away our free will or are they enabling us to reach our full potential? She was prompted to ask this question in response to my statement that "enhancements just augment people's existing capabilities, so they may enable them to lead a more "authentic life" and reach their full potential." Conversely, one may argue that "natural" excellence is worth more than bought talent. In my view and in some experts' views (see Bostrom and Sandberg 2009, 311-341), if there are shortcuts to excellence, then access to those shortcuts is what determines success or failures, not one's inherent hard work. Moreover, some shortcuts in our society are completely acceptable. For example, performance enhancing athletic shoes and the use of calculators in high school physics promote authenticity. While we may be implicitly coerced into using calculators, I think it is acceptable because the use of a calculator allows us to focus our energies on the subject we are trying to master (whether it be using equations in Biochemistry or formulas in physics), rather than "wasting time" doing the algebra and not grasping the main idea of the science we are learning.

Another particularly intriguing question I was asked was "what are the cultural responses on enhancements?" Since I came at my paper from more of a neuroscience and ethics view, and less of a sociological or anthropological background, I didn't know much about the existing literature except to know that most cultures probably view it differently. For example, when speaking with my cousin my age in India, he does not know of peers with ADHD, has never heard of Ritalin, or even study drugs commonly used in US colleges, though he goes to a prestigious university in India. That got me wondering whether parents there immediately discredit those ideas and frown upon enhancements other than natural remedies. As a kid, I would always mix up my P's, F's and 5's and I had a hard time sitting on one place, so thought that maybe I needed to get tested for ADHD or maybe dyslexia. I remember when I voiced this thought to my parents, they immediately said nothing was wrong with me I just needed to focus better. As I mentioned in my paper, a study done by Ilina Singh on kids with ADHD in the

UK and the US underscores the idea that different cultures view enhancements differently (Singh 2014, 237-240). After asking children in both countries why they took Ritalin, the study found that kids in the UK mainly reported that they take Ritalin so they can "manage anger and bad behaviors" but kids in US reported that they take Ritalin to "be more productive and improve academic performance."

Another stimulating question a fellow speaker brought up stumped me at first. He asked whether glasses and clothes are considered enhancements. The answer to that lies in the definition. Though there are many definitions of cognitive enhancement, most say something among the lines of: "the use of drugs, biotechnological strategies or other means by healthy individuals aiming at the improvement of cognitive functions such as vigilance, concentration or memory without any medical need" (Hildt and Andreas et al 2013). So yes, while glasses can improve your ability to see what a professor is writing on the board, thereby allowing you to engage with the material more, they are not considered a form of enhancement, in my opinion, because they are not augmenting your cognitive ability [memory, reasoning, problem solving, etc.] as do the other enhancements.

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compos mentis

Neuroplasticity, Nagel and nn-DMT: Where Neuroscience and Evolutionary Biology Meet Mystical Mathematics and Theoneurological Models of Consciousness

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ABSTRACT

Explaining the neural correlates of consciousness appears to be the easy problem of consciousness; as seen in the numerous studies on neuroplasticity cited by Norman Doidge in The Brain that Changes Itself, intentional action on the part of a self rather than the brain seems to be responsible for these changes. This refutes reductive materialist views that brain activity equals consciousness. The hard problem of consciousness is explaining the mechanisms that create qualia and experiences of a self-conscious moral agent; this; seems to be more of a mystery. In this paper I would like to discuss some logical options that don't seem to be seriously considered by the community as a whole in the hope that we may close the gap between the mysterious hard problem of consciousness and empirical understanding. Thomas Nagel shows us that teleological arguments for the existence of the laws of physics as we know them (reductive materialism) or divine command or intelligent design (dualism) do not hold up to scrutiny when trying to theoretically reproduce them without historical accounts. The remaining alternative is monism of either a neutral or panpsychic leaning. Nagel defines a neutral leaning to monism that implies that the mechanisms of consciousness are known unknowns not made intelligible by current science, while also leaving room for unknown unknowns. In this paper I would like to explore a few alternatives that can be at least conceptualized within our current scientific framework that could shed some light on how philosophers, theologians and scientists alike can work towards understanding these known unknowns.

NEUROPLASTICITY

For Norman Doidge neuroplasticity is the brain's ability to alter the pathways in which it uses to execute particular functions. The standard doctrine in neuroscience preceding the studies that Doidge highlights in *The Brain that Changes Itself* was dogmatic and presented the brain as a set system of pathways that were triggered in a predetermined way based on sensory input. Under this view, the statistical mapping of neurological pathways is assumed to be a sufficient method of explaining behavior and there are standard models that can be used as blanket explanations, or rather *presets.* For instance under this doctrine, the brain should have a preset pathway that is specialized for determining sensory inputs of the hand; the individual fingers ought to have their own specific correlates when looking at fMRI images and would not function properly when the pathways deviate from this preset. Another example would be to state that there are specific preset pathways in the brain that allow the sensations of sight, sound, taste, smell and touch to occur under the umbrella of a physical consciousness housed in the brain. Unfortunately for this doctrine, there is a plethora of evidence to the contrary (Doidge 2007, 218).

Scientists in the 1960's discovered that there is a "critical period", a period of time in which all of these perceived qualities of consciousness are molded into their functional pathways. Rather than being born with preset pathways, the brain's activity develops in a manner that coincides with sensory inputs. Two researchers, Hubel and Weisel had kittens that were blind in one eye because the scientists had sewn one eye shut during the critical period of visual development only to reopen it after the critical period had ended. It seems that since the eye was not used, the kittens' brains failed to develop the pathways needed for vision, and the brain imaging of the time supported this (Doidge 2007, 42-69). This is evidence that during the critical period the brain is not concrete, but instead *plastic*; instead of having preset capabilities the brain is molded through development .

With the critical period established as a period of great neuroplasticity early in life, the question of whether or not the brain retains this quality later in life arises. At first this idea was met with great criticism, and even supporters of the critical period were skeptical. However, numerous studies that indicate the brain images of primates and human beings alike have made it apparent that the brain does in fact rearrange its pathways when it is primed to (Doidge 2007, 64). In cases ranging from amputees to stroke victims or people with learning

disabilities, neuroplasticity has been shown to be present in many forms. These neuroplastic changes are often adaptive and allow for a better interaction with the world, such as a stroke victim that regains motor function to a degree after rebuilding the connections between their limbs and brain or a child with autism that uses educational material to reinforce pathways related to their auditory comprehension and language skills to improve socialization. Since brain imaging technology has expanded there are more and more studies being produced that show the incredible restructuring powers of the brain in great detail and give us an idea of how neurotransmitters interact (Doidge 2007, 84).

These changes are still ordered to a degree, as the axiom "neurons that fire together, wire together[1]" (Doidge 2007, 50) implies it's not random, but rather fluid and produces practical results, such as a missing finger having its neural correlate mapped to the neighboring finger. As Doidge digs deeper into the mechanisms and implications of neuroplastic change it becomes apparent that there is another mechanism that puts our conscious experience into motion. There is something that is in charge of ordering the brain and directing it to make these neuroplastic changes; this would be the self. All of the human cases discussed in *The Brain that Changes Itself* have something in common, and that is their interaction with the culture around them and the ability to form new pathways (Doidge 2007, 207-208). I will discuss later that this cultural interaction is good reason to suspect the presence of a self-conscious moral agent (SCMA) that uses sensory input from the entire body and intentionally reflects upon past experiences and knowledge in order to interact with the world in ways that are meaningful to the SCMA's experience . Self-consciousness (cognitive self- reflection) and awareness of morals and values emerge from mind-brain interactionism, I will explain later that there is further evidence that panpsychism should be considered opposed to dualism or reductive materialism.

NAGEL AND THE DOUBLE MIND PROBLEM

Nagel sees the divide between conscious experience and cognitive self-reflection as the "Double Mind Problem" and holds that it cannot be explained thoroughly by the natural sciences, namely brain imaging and the adherence to a reductive materialist paradigm. In *Mind and Cosmos* Nagel poses the question "in

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1. The axiom is attributed to neuroscientist Carla Shatz, although it's thought the original concept could be attributed to Sigmund Freud.

what way or ways is the world intelligible?" (Nagel 2012, 19) as a benchmark for the goals of both science and philosophy. Intelligibility is to be taken as the ability to be understood by the "double mind"; being not just consciously experienced but also cognitively reflected upon. Using this definition as an anchor Nagel discusses the verificationist and logical positivist roles played by science as one of the most aesthetically pleasing and useful methods of gaining intelligibility (Nagel 2012, 37-38). It consists of empirical evidence that builds off of it self and explains just about every perceivable aspect of the physical world . The lack of understanding exactly how the relationships between the physical world, the conscious mind and the self-reflecting cognitive mind function is where the natural sciences fall short in presenting intelligibility (Nagel 2012, 41). Since self-reflecting cognitive activities appear to be so central to an SCMA's experience it is not proper to claim contemporary neuroscience or neo-Darwinian (Tallis 2011, 147-182)[2] paradigms as being sufficient theories of everything. Nagel does make a concession that if a theory were developed that allows us to accurately and thoroughly explain the exact origin and nature of self-reflecting cognition (or lack thereof) in addition to the biological elements of any physical being it could shed some light on how the process works, although still does not explain the initial emergence of self-reflecting cognition (Nagel 2012, 85-88).

NEUTRAL MONISM

Nagel takes the position of neutral monism which he outlines in the words of Tom Sorell:

> Even if the mechanisms that produced biological life, including consciousness, are, at some level, the *same* as those that operate in the physical universe it does not follow that those mechanisms are physical just because physical evolution preceded biological evolution. Perhaps some transmental concept is required to capture both mechanisms.[3]

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2. Tallis describes neo-darwinism or "Darwinitis" as a perverse misrepresentation of Darwin's theories popularized by Richard Dawkins and other prominent evolutionary biologists. Darwinitis is seen as a form of scientism.

3. Tom Sorell, *Descartes Reinvented* retrieved from Nagel

Nagel and Sorell believe that physical things and mental things could both exist in the physical universe but ultimately leaves open a claim to the mystery of the most fundamental levels of the emergence of consciousness in biological organisms. Some theistic arguments are in fact more compelling for Nagel than materialism, however he does not believe that they hold any more legitimacy as candidates for theories of everything on a grand scale (Nagel 2012, 65-67). A theory of everything that does not have gaps in intelligibility; one that accounts for consciousness, quantum mechanics, the origin of or multiplicity of the universe, the existence of deities, or unknown unknowns . It is the nature of the teleological claims made by both theists and materialists that Nagel objects to (Nagel 2012, 91-93). The laws of physics are assumed to be self evident truths and deterministic, but Nagel is only comfortable in accepting this if there is also understanding of why the laws are what they are other than referencing historical accounts. He would instead accept an explanation only if it could account for how those laws would be employed in an alternate universe where the physical reality is empirically measurably different (Nagel 2012, 88-92). The same objection holds for theistic dualism where there is no account of how a God or gods interact with the construction of the physical universe and the experiences of SCMAs on a fundamental level (Nagel 2012, 95).

Under neutral monism Nagel lays out the framework of value realism to refute neo-Darwinian ethical naturalism. He introduces Sharon Street's argument that in Darwinian terms there is no evidence to relate awareness of mind-independent moral truths or concepts of good and bad to the process of natural selection and the end goals of reproductive fitness (Nagel 2012, 105-111). These are just either ethical egoist or relativistic and subjective moral views, noting that even altruism doesn't equate for awareness of "good" but rather can be explained as only self-sustaining behavior to ensure reproductive fitness. This stance against the existence of ethical realism is often extended into also reducing many of the humanities to reductive materialism, however as I will discuss later on there are also evolutionary reasons to think otherwise (Tallis 2011, 213-229). Nagel welcomes Streets criticisms of ethical naturalism but wishes to impose a belief in value (ethical) realism; this being the belief that human beings have the ability to detect value as an attribute of self-conscious awareness (Nagel 2012, 105-111). Thus defending the existence of real morals and concepts such as good and bad as parts of biological order falling under the scope of Darwinism. However the ability

to detect them does not equate to intelligibly understanding (with the "double mind") exactly how these values came to be for the same reasons that detecting the concrete physical laws of the universe or will of a theistic commander does not equal understanding how they came into place .

Subjective feelings based on perceived, but not true understandings of value, such as the violent teachings and cultures of cults and religious extremist groups are a prime example of why ethical naturalism is not sufficient in explaining morality. While the underlying beliefs across world religions regarding the existence of omnipotent benefactors and measurable evil among other facets are similar in extensive ways, there are startling deviations of interpretations seen in the world; all of which claim knowledge and true understanding of moral principles. While this can be seen as the failure of religious practises to bring about a truly intelligible understanding of morality I believe the commonalities between certain historical religious accounts and some modern neuroscience and mathematical revelations can shine some light on how to fill in some of the gaps in Nagel's neutral monism.

FILLING IN THE GAPS WITH THEONEUROLOGICAL MODELS

Nagel does not commit to a mechanism in which consciousness, cognition and values come into existence. In not sufficiently closing this gap his support of panpsychism is incomplete, even as thoroughly as he explains the hypothetical manner in which we conceive of certain types of matter arranging in specific ways to unleash their intrinsic capabilities of consciousness in all animals, and cognition and values in human beings by carefully constructing models with scientific evidence. I would like to argue that there is perhaps some evidence that can be used to show that psychedelics, namely n,n-dimethyltryptamine (DMT) and psilocybin are at least in part related to the emergence of self-aware consciousness, cognition and values in human beings.

Before proceeding I'd like to note that I am not necessarily arguing for or against the existence of a God or gods, merely presenting a theory of where self conscious reflection and value realism may come from. However, it is true that some of the remaining sources I wish to cite are in fact written from a theoneurological perspective or focus on the importance of spiritual or divine properties. Just as Nagel embraces the importance of skepticism against scientific dogma, I will proceed in the tradition of many materialists in being skeptical of these theistic claims, only instead through the lens of neutral monism. It is also worth noting the

great stigma surrounding these substances; while drug abuse certainly is an issue that is detrimental to society, the research described in the following section is not to be mistaken as such.

The likeness of individual psychedelic experiences dating back to prehistoric times spanning cultures around the globe when compared with contemporary accounts (Strassman 2001, 153-247) suggests values exist. Many researchers believe cave paintings and artifacts depicting sacred geometry or depictions of cultural events as well as the stories of prophets, omens, oracles and diviners to be connected to the psychedelic experience of altered consciousness (Abraham 2015, 3).The subjective themes of these experiences include introspection, a separation from the ego, a sense of being one with the world, contact with divine beings, and overwhelming experiences with infinity as well as complex visual hallucinations and distortions thought to often have mathematical significance (Abraham 2015, 13-18). To a proto-conscious mind these experiences would perhaps be both the beginning of religious experience and the mechanics of mathematics in human minds, and to Terence Mckenna they were (Abraham 2015, 14). These experiences were seen to have intrinsic value and may have been the driving factor of crafting the roots of written language, as evident in early cave drawings being interpreted as depicting the psychedelic experiences. Neuroplasticity would allow for the realization of these concepts to perhaps be shared to a degree without the first person experience of the psychedelic state, so how ingrained is this process in the realization of consciousness and values? Religious storytelling and teaching could be a means of culturally transmitting these neuroplastic changes and instilling realization of values. It's also very important to note that there are numerous reports of similar experiences involving such existential themes being completely unrelated to psychedelic use and rather the product of any one of numerous meditation or divination techniques or even more seemingly mundane activities such as dancing rituals or social gatherings, which no doubt also have neurological models to be explored (Winkelman 2010, 25-28). The question is then to what degree are psychedelics responsible for meaningful progress in human evolution? There are many findings that indicate how important the intake of different compounds, mind altering or not affect human and primate populations and it can have profound effects (Winkelman 2010, 251-253). It's important to note DMT's presence in many plants, early use would have been completely coincidental due to DMT's need to be mixed with

a monoamine oxidase inhibitor to be active when consumed orally (Strassman 2001, 42-56). When this combination of plants was discovered, awareness of it could have likely spread quickly leading changes in social customs.

In his "Stoned Ape Theory" Terence McKenna, popular figure from 1960's counterculture, outlines his beliefs that low dose psilocybin intake from wild mushrooms. He posits that their ingestion would have greatly affected the hunting abilities of early hominids by increasing their visual accuracy and stamina; in larger doses he suggests they would have also increased reproductive fitness with the effects as an aphrodisiac and the spiritual experiences would have suggested a more compassionate societal structure. Of course these claims are wildly speculative, McKenna places a lot of emphasis on ideas that don't hold up to an intelligible understanding of evolution and rely on the existence of extraterrestrials or deities (Lycaeum.org 2015), Interviews with Terence McKenna); certainly these gaps should not lead to the immediate dismissal of all psychedelic models of evolution. Naturally "the hunt" as a human ritual is depicted in cave drawings quite often and shows a level of self reflection purely for the sake of documenting their conscious experience (Abraham 2015, 34). This is to say that upright walking, the freedom of the hands, the ability to hunt over long distances and the imagination to draw their experience on a cave wall, the will to bury and celebrate the dead and innate existential wonder; all of these things we think of as human (Tallis 2011, 213-229) on some level could be related to the presence of psychedelics in the diets of these individuals over the tens of thousands of years it took to develop these certain humanities. After all the if this is the sort of reflection that leads to complex languages and writing like we see today it has the potential for quite a bit of intelligibility. This sentiment is expressed quite well in a quote from the 1975 novel *Ragtime* by E. L. Doctorow; "it is proposed that human beings, by the act of making witness, warranted times and places outside their existence other than the time and place they were living through"; "the hunt" was a ritual of great importance for these early humans, and they took it upon themselves to document the experience.

Ralph Abraham a Mathematics professor claims that his work developing dynamic systems theory and contributions to chaos theory in the 1960s and 70s that were important in developing computer graphics were directly influenced by his use of psychedelic compounds and marijuana (Abraham 2015, 19-23). In this case the evident truths he found were related to mathematics and preceded

by his already established thoughts about particular equations and geometric (or not) designs. He illustrates this point with a set of complex numbers known as the Mandelbrot set (Abraham 1993, 1), which when rendered on a computer create infinitely repeating fractal patterns akin to the hallucinations experienced on DMT and related chemicals. Fractal, though often not as brilliant or precise as a computer generated Mandelbrot set appear nearly everywhere in nature (Abraham 1993,1). In my opinion these images are not far off from deep space images of large cosmic bodies, and even with a little imagination I would also liken Mandelbrot images to fMRI images. In functions such as this we see instances of infinite recursion, perhaps in the realm of the complex and imaginary numbers that play a part in creating these images some further intelligibility of the universe can be uncovered. Curiously, there are even some mathematical functions that reproduce images of themselves in 2 dimensions when certain rules are applied; one such function is known as Tupper's self-referential formula, and when calculated, transcribed to binary and graphed will display an image of itself (Parker 2014, 358-361). Perhaps, Nagel is looking for a self-referential theory of everything.
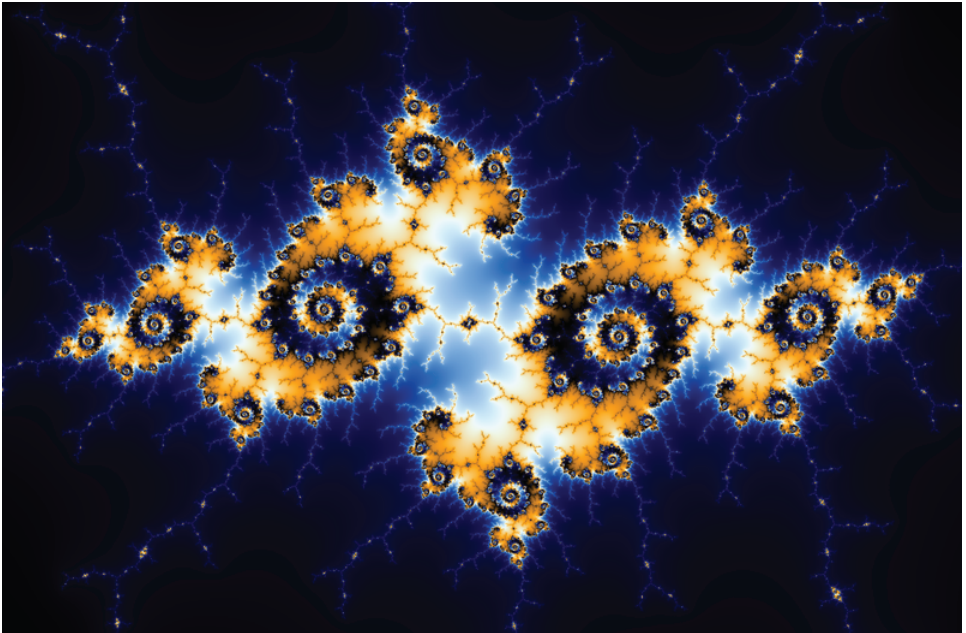
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4.   Computer rendering of a Mandelbrot set. Image from Wikipedia.

In the case of the origins of spirituality, religions and concepts that are shared universally between them it could be argued that intrinsic values seen in the psychedelic experience arose from established thoughts seeking to explain the driving forces of the conscious experience and the psychedelics perhaps filled in some neuroplastic blanks. Did the psychedelic experience prime the human mind to think in such a way as perhaps McKenna and Abraham would readily suggest? Either way, it is not unfathomable to infer that the interactions between compounds like DMT and the brain fostered in one way or another the layer upon layer of neuroplastic self reflection and decision making that goes into the double human mind; one end consciously perceiving and the other side cognitively reflecting. Further, it is also disingenuous to write off the psychedelic experience as a lens looking into human nature, keeping in mind the many cultural events that exist surrounding altered consciousness (Winkelman 2001, 25-28).

I believe that further research into the mechanisms of consciousness and how it can be mathematically altered by chemicals, such as the work of Strassman is warranted. In 2013 Strassman and his team successfully extracted DMT from the pineal gland of a rat, proving his long standing hypothesis that DMT can be endogenously created in the pineal gland of mammals (Smith 2015, 34). Shawn Smith of Liberty University presented a thesis in 2015 in which he is critical of Strassman's possible position as a "DMT zealot", or a position of putting too much emphasis on the importance of the psychedelic compound in terms of proving the existence or nature of spiritual properties, this goes in tandem with the earlier statement that spiritual experiences and Shamanic rituals are not always related to psychedelics and that perhaps there are other ways to access them. Smith's thesis focuses partially on proving the genuine nature and significance of the spiritual experiences documented in Strassman's work and ultimately defining "spiritual qualia" and whether or not spiritual qualia is reducible to the physical world (Smith 2015, 51-57). He ultimately concludes that Strassman's model is not sufficient in answering the question of spiritual qualia because he cannot necessarily prove whether a given experience is genuinely spiritual or a hallucination of something perceived to be spiritual (Smith 2015, 62-65). I find Smith's objection similar to Nagel's objections to neo-Darwinism; where Smith would be asking "is this experience actually spiritual?", Nagel would be asking "is this representation of an experience actually scientific or intelligible?" . The difference of course being Smith's belief in theology, and myself and Nagel's agnostic leanings. I believe

that Smith's objection could also apply to Abraham's claims of obtaining spiritual knowledge and mystical mathematical principles from the psychedelic experience in the same way he does Strassman; Abraham isn't necessarily experiencing any spiritual qualia either, just the perception of such.

CONCLUSION

One of the previous front-runners for a working theory of consciousness was computational mind theory, and it was rightfully given attention given the complex network of neural activity that can be observed thanks to the great endeavors of neuroscience. However, it is of course the intentionality of the human mind that separates it from a computer, after all it was the intentional human mind that developed the computer. Perhaps all of humankind's achievements can be attributed in part to a little panpsychic push from altered consciousness and massive culturally induced neuroplasticity from experiences with psychedelic compounds and will one day help achieve concrete intelligible understanding of consciousness and the physical universe; or perhaps alternatively there is a workable theoneurological model yet to be developed, in either case, the infamous chess match between theists and atheists fraudulently calling "checkmate" and demanding their opponent's burden of proof still remains in progress. The future of the understanding of consciousness, it appears, will be hinged on further interdisciplinary study and a strict non-adherence to either reductive materialism or dualism.

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compos mentis

Unconscious Acts as Acts with Moral Responsibility

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ABSTRACT

Although free will and moral responsibility tend to be causally linked, this is not a direct one-to-one relationship, as it is commonly perceived. I argue that moral responsibility extends beyond free will actions, such that some unconscious actions, which would not easily be described as free, do in fact carry the weight of moral responsibility all the same. This is primarily evidenced through the clear influence that conscious decisions have on the unconscious framework for decision making that a person uses to act without conscious input. Though free will is limited by factors such as the framework of birth, the age at which one can enforce free will decisions, and by inherent biological limitations on free will, some circumstances remain outside of these parameters in which free will can influence attitudes, and these attitudes determine unconscious actions; therefore, these actions carry moral responsibility.

INTRODUCTION

Belief in free will is an underlying principle upon which all society is founded. When people believe in responsibility and punishment and reward, they are implicitly believing in free will. They are believing in the concept of humans as agents, causative factors in this world. Often, people don't even think about this; it acts as an underlying foundation that shapes the way they interpret events. However, the assumption often arises that for an action to have moral responsibility, it must be so that the act was directly, freely chosen. Free will is inherently linked with moral responsibility — if we, as human beings, had no choice in an act, how can we be held responsible for it? If we could not have made another decision, no matter what, how could it still be considered our fault? The fact is, moral responsibility extends beyond free choices. Unconscious decisions are influenced by prior conscious decisions, such that even if an unconscious act is not free, it still carries the weight of moral responsibility. Thus, while in that moment the choice may be intuitive and faster than consciousness can process, in the long term, they were decisions of free will which *led to* that act. Unconscious actions are not under our control in that moment, but some are under our control in the long term, which means that we still carry the weight of moral responsibility for those acts.

IN DEFINING FREE WILL AND MORAL RESPONSIBILITY

In order to discuss moral responsibility, we must first discuss free will. And, in order to discuss free will, we must first define it. A major issue in discussions of free will is that there is no overarching, agreed upon definition. This can result in a problem of equivocation — arguments are made in which the definition of free will is glossed over, instead of explicitly defined, and often that definition can even change within a single argument.

In defining free will, I operate under the libertarian viewpoint, in that a free act is something that *originates* causally within the person performing the action. I reject compatibilism (or soft determinism) because compatibilism requires an inherent redefinition of the term free will — the only way to reconcile free will and a fully deterministic universe. Thomas Hobbes, one of the first soft determinists, says "a man is self determining when he is not prevented by conditions beyond his control from determining his action in accordance with his will (i.e. intentions or desires)" (Kane 1985, 7). This is "free will" allowing for compatibilism with determinism, because it's not about choice but about desire. However, this is

reinterpreting the entire concept of free will for the sake of making these concepts compatible. Hobbes' free will involves one inevitable choice — it's just that that choice is the one which a person desires to make. This isn't *free*. It's just what you *will*. It's only half of the term.

Rather than accepting this redefinition of term, I instead follow along the lines of Robert Kane, a philosopher at the University of Texas and one of the leading contemporary authors on free will. Kane defines free will by saying, "Free will is the power in human beings… to originate or bring into existence the purposes or ends that guide their actions" (1985, 2).

The conclusion is often drawn that there is a tight connection between freedom and consciousness. Roy Baumeister studied people's perceptions of free will and found that "conscious, rational choice and selfcontrol seem to be integral parts of what people perceive as free" (2008, 16). It becomes naturally assumed that for an act to be free, it must be something the person is aware of choosing. If I take a drink of water without being aware I'm taking a drink of water, as an instinctive response to thirst, then I haven't *chosen* to take a drink of water. The follow up conclusion is that I have not *freely* taken a drink at all. Some philosophers make this assumption more or less explicit, which leads to Gallagher's definition of free will. Shaun Gallagher, a philosopher from the University of Memphis, says that free will is not about muscle movements at all, but about the overarching goal, the *intended result*. He states that motor control processes are "subpersonal" and not involved in free will at all (Gallagher 2006, 118). If free will is about intent, it must be conscious. This assumption isn't always made so explicit, however; neuroscientist Benjamin Libet made this assumption without defining free will explicitly at all (Libet, 1992). Explicitly or not, people reconcile the person as a causative agent with the mounting evidence that neurons within the brain are what initiate actions by providing consciousness as the bridge between them. However, simply because free actions stop with conscious activity, this does not extend to claiming moral responsibility stops as well. It's important to establish parameters for free will for reasons beyond simple philosophical curiosity because free will is so tightly linked to moral responsibility. In order to maintain that moral responsibility ever exists, one must admit to the existence of free will. If a person could not have freely chosen another route, he cannot be held morally responsible (he can be punished, but that's an entirely different argument). Thus, if moral responsibility exists, free will too must exist at some point. *If conscious actions are free*, then

unconscious actions can have moral responsibility. Whether or not there is free will to begin with is beyond the scope of this paper. If so, *conscious acts can bring into existence one's ends,* and therefore conscious acts have moral responsibility. What I will argue, beyond this, is that if conscious acts have moral responsibility, then unconscious actions can also have moral responsibility. Unconscious acts follow from conscious processing.

I posit that moral responsibility of an act requires free will *at some point in life* but not every act needs to be conscious and free to be considered a moral one. To be clear up front: this is not to say that *every* unconscious act has moral responsibility; rather, *some* unconscious acts have moral responsibility. Even so, many and perhaps most of the acts for which we are responsible may be unconscious. Unconscious actions make up most of our acts by far, for reasons of mental efficiency. Human beings use mental shortcuts. We are not physiologically capable of fully examining every situation for its costs and benefits — it simply is not a possibility. For time and mental processing reasons, many decisions are made without ever reaching conscious awareness.

If the definition of free will is applied only to acts that are *immediate* in the causal power of the agent, where *in that moment* the person could chose otherwise — this presents an interest contrast to the assumption that moral responsibility only occurs in free acts. That is, if unconscious actions are not free, if the definition of free will is taken strictly, then acts can bear moral responsibility without being free. This goes against the natural tendency to tightly associate moral responsibility with *only free acts*. For some, this tendency goes so far as suggest an *analytic* connection, or a connection as a matter of *definition*. This is evident, for example, when Daniel Dennett, a philosopher and cognitive scientist, defines free will as "whatever it is that gives us moral responsibility" (2008). To say free will is so tightly associated with moral responsibility is to define free will in much broader terms than I have above. Free acts are conscious, but moral responsibility does not have to be.

SOCIAL PSYCHOLOGY

Attitudes are defined as an "evaluative reaction toward something or someone (often rooted in one's beliefs, and exhibited in one's feelings and intended behavior)" (Myers 2013, 120). Attitudes can be something we are consciously aware of or something implicit. Behaviors, on the other hand, are the actions taken,

whether consciously or unconsciously. In this case, we will focus on *unconscious* actions. Unconscious actions can be a result of purely situational factors, such as, or a result of the attitudes that a person holds. The situation is not something we typically control. An unconscious action driven by situational influence, wherein the action is because of the situation and therefore could not have happened otherwise, is not one for which a person has moral responsibility. However, an action due to *attitudes* is an action that could have happened one way, but could also have happened another, based on the attitudes that person holds, and attitudes can be changed by conscious actions. This is the key difference which gives these actions moral responsibility.

It is not just attitudes that shape unconscious reactions in the moment, however. These attitudes were previously formed by conscious decisions. Playing a role, for example, can quickly influence attitudes which in turn affect behaviors (Myers 2013, 127). This was strongly demonstrated in the well known Zimbardo Prison Study, in which college students assigned to the roles of prisoner and guard took on these roles so strongly the experiment had to be terminated (Haney, Banks, and Zimbardo 1973). It has been also found that the mere act of saying something can cause it to become an attitude, as long as it is something a person is saying of his own free will (Festinger and Carlsmith 1959). Consciously choosing words affects future, unconscious acts. Consciously chosen behaviors can also influence future unconscious acts because they influence behaviors. Positive behaviors toward a person shift attitudes toward that person in a positive way (Myers 2013, 129). In addition, it has been found that not only do we tend to hurt those that we already dislike, but that hurting someone actually leads to more disliking (Myers 2013, 131). Thus, hurting a person changes our attitude toward that person into something more negative, as a way of justifying our having hurt them. This is especially true when the hurtful behavior was a choice, rather than the result of coercion — we take more internal responsibility for an act which we have chosen (Myers 2013, 131), and thus it has more influence on our attitude. This negative attitude means a person is primed for unconscious negative actions in the future, such as passing this person over for a treat that is randomly awarded.

Deliberate decisions (*free* decisions) can also change emotional reactions. Perhaps a person is attending anger management classes. He may be told to breathe deeply and repeat a mantra such as "relax" to himself, in order to calm his anger reaction. Repeatedly managing his anger reaction in the present will

reduce his anger reaction in the future — conscious decisions now, affect his future emotional reactions.

Experiences and prior decisions shape *schemas*, which are mental frameworks for how we view the world. These schemas are what people use in conjunction with attitudes to make unconscious decisions. For example, if a person has a prejudicial schema that says, *all people from Asia are smart*, she will look at a person from Asia and assume that he is smart. This may lead her to unconsciously decide to ask him for help with her homework, without even recognizing that it was her underlying schema that caused her to make the decision. But just because this particular decision that the Asian student would be smarter and to therefore consult him because of that was not conscious, does not mean that it was not a decision in which she had a choice, at some point. This is the critical factor — she has moral responsibility for her decision because she did, at one point, have control over the outcome. Perhaps earlier in life she had a chance to become friends with a family from Asia, which would have reshaped her schemas. But she freely and consciously chose not to. Would people then say her prejudice is not her fault, that she has no moral responsibility for it? No, because she *chose* to allow her prejudice to continue. She had a chance to reshape her prejudices and schemas, and freely chose not to. The consequences of that decision are a product of her free will, and therefore also free actions.

It has been pointed out that, in this scenario, what she had conscious control over was not in shaping the attitude which she held, but rather in consciously deciding the action, which consequently (and perhaps unintentionally) alters her attitude. Thus, perhaps the schema alteration is not conscious and intentional. However, to this I counter that it matters less that it *is* altered consciously and more that it *can be* altered consciously. If a person is aware of schemas, then he or she can consciously make decisions with awareness of how these decisions may alter schemas. Even if a person is not aware of the term schema, he or she may understand that behaviors shape attitudes on a conceptual level — it is, after all, the theory behind the saying, "Fake it until you make it." Behave as if you are who you want to be, and you will become that ideal self. This is what shaping attitudes with conscious decisions is, at the heart.

LIMITATIONS

At several points I have mentioned that *some* unconscious actions have moral responsibility, but not all. Though it is impossible to list every situation and whether it is or is not one which moral responsibility is applicable to, that does not mean that some specific parameters cannot be established. First, it is demonstrable that free will itself is inherently limited, and this limits the situations in which a person can conceivably alter his or her schemas. Conscious decision making requires the use of a myriad of neural circuits, which means it requires the use of a large quantity of glucose. Glucose is in limited supply within the human body, and when some is used, less is available for the future (Baumeister 2008, 17). This is why willpower is considered to be a limited concept — the more you use willpower in a day, the more difficult it becomes to resist future temptations (Vohs and Faber 2007). This limits our ability to make free, conscious, schema shaping decisions to certain circumstances which cannot be generalized very well.

Additionally, it was posited in a critique of this essay that free will is limited by society — for example, I am limited by society such that I would not be truly free to stand up, kick over my chair, steal someone else's water bottle, and abruptly exit the room. However, I argue that this is, again, a misrepresentation of the separate terms of free will. This is, rather than a limitation on what I am *free* to do, a limitation of what I *will* to do. I do not truly will to do this because I am a conscious being capable of weighing costs and benefits. However, I am free to do so, should I decide that the benefit of emotional release in this moment outweighs the consequences of disapproval and whatever else may follow.

However, the core argument made is that free will is limited, and this is a valuable point. Free will is limited, in more ways than its scarcity and thus necessary rationing. Free will operates within a limited framework. This is to say that a person's birth is relevant to the free will choices which he or she can feasibly make. If a person is born into poverty, by nature he or she has fewer options from which to freely choose. If free will decisions are limited, shaping of attitudes is subsequently limited, and thus fewer unconscious actions can be considered to carry the weight of moral responsibility. Humans are unable to choose the framework within which they are born, and this necessarily limits free will. In addition, age is a major factor in free will decisions. For example, although a child can choose freely biologically, he or she does not have the strength to force these decisions through if an adult disagrees. Thus, a child cannot freely

choose his or her own environment, and has less influence on shaping his or her own attitudes. The age at which a child can choose his or her own environment is culturally determined, and thus this becomes another vagary in terms of which situations can be considered under the influence of freely shaped schemas. Free will is limited, thus attitude shaping is limited, thus those unconscious actions which are the result of consciously influenced attitudes are also limited.

CONCLUSION

As I understand it, free will is the power that we, as human beings have, to bring into existence our own ends, thereby giving us moral responsibility. Free will requires conscious decisions to precipitate actions. Conscious actions fit this definition every time, and therefore have moral responsibility. Some unconscious actions are exclusively the products of situational factors beyond a person's control and do not fit this definition, and therefore are not acts for which we are morally responsible. However, other unconscious actions are a clear product of strong attitudes and schemas, which are a product of prior conscious behaviors. This is why we are morally responsible for these unconscious behaviors.

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Fantasy, Reality, and the Self

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ABSTRACT

The question of how big of a role our thoughts and fantasies play in the physical world has been a big one in philosophy for quite some time, and continues to be one of the most hotly debated topics in philosophy even today. The reality is that these two types of perception exist, and that there is a distinction between these two means of perceiving which allows us to tell them apart from one-another. The question of whether or not these aspects of reality affect one another, or just exist without any relationship between the two is one very hotly debated in philosophy. However, the current trend in philosophy and psychology seems as though it will lead us to neglect such questions.[1] I wish to warn against this trend, as neglecting the role of our thoughts and fantasies in understanding reality is a mistake, one that threatens to impoverish philosophy and psychology if permitted to take root. Next I posit a theory of what the self really is, and defend this claim. Finally, I posit a theory in of free will using the definition of the self that I have laid out earlier, and defend it against objections that arise from Libet's findings. While I will not pretend to have solved the problem of free will vs determinism once and for all, I believe that I make a worthwhile argument in defense of free will.

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1. The case studies of psychology, are an example of what makes the field unscientific, as they generalize from one human being to others. The same sort of claim can be made of philosophy, as can clearly be seen by the "existentialist" tradition. This among other reasons is why the two disciplines are counted as humanities and not the sciences.

I. THE DANGER WITH THE MODERN METHOD

There is a very important, symbiotic relationship between the world of our thoughts (the *ideal world)* and the world which we physically inhabit (the *material world.*) The two of these are of equal importance, so I want to argue, as there is a symbiotic relationship between the two that we take advantage of on a day-to-day basis. As a very simple example, we can appreciate the existence of *thought experiments* which philosophers use very often in order to prove a point, or to test whether or not a moral theory actually has the sort of implications we would want it to have. Even for practical things such as building a log cabin, we need to create some sort of blueprint within our minds in order that we may see our task done. But the fantasy itself is always necessarily based upon reality. Not only do we draw inspiration from the world in order to create our fantasies, but we are necessarily limited by the faculties of our cognition such that all our thoughts still conform to the laws of logic. That is to say, a fact (of the world) and its negation cannot simultaneously be true. The original *Star Trek* was a struggle between the Federation and the Klingon empire, a struggle which was meant to resemble the UN and the USSR at the time of the series' creation; oftentimes we see fiction as a creative outlet for those things that obsess the *Zeitgeist* of the times. Tolkien stated that he did not write "The Lord of the Rings" to allegorically represent the first world war, but literary critics now argue that he must have subconsciously drawn a lot of inspiration from it.

A study (Mar and Oatley 2009) showed that people who spend more time reading fiction tend to have a better theory of mind and more empathy towards other human beings. We can see thus, that our ability to actively imagine and experience allows us to more accurately represent or anticipate the matter of facts about the material world. As the famous quote by William Nicholson states "We read to know that we are not alone." If indeed we can understand people better if we have better-developed imaginations, then why would we try to make psychology a field that disregards the human minds' ability to imagine itself in other worlds? It seems strange to say that we should disregard the worlds of fantasy only because inquiry into phenomena of this sort cannot be studied completely scientifically. The same goes for philosophy.

In the 18th century, a similar crisis was taking root in the intellectual world: empiricism. Philosophy sought to base everything only upon that which could be scientifically proven and consequently became an impoverished art, as there were

certain questions it simply could not answer. Questions like: "How do we know that the sun will rise tomorrow?" would simply be ones to which we could find no satisfying answer. Empirically, we do not know that the sun will rise tomorrow, in fact, we could make no predictions of the future whatsoever; we could not "know" anything in the classical sense of the word "knowledge." In order to solve this problem, Kant undertook rigorous means of proving that we humans have knowledge that is not based upon empirical evidence, and is intrinsic within the human mind itself.[1] Kant's success in showing that empiricism would impoverish the discipline of philosophy started the new dominant discipline for doing philosophy: epistemology. This rise in a new means of philosophical investigation would inspire many thinkers in the ages to come; not least of which was Sigmund Freud, the father of the discipline of psychology.

Granted, Freud's ideas have lost popularity within the very discipline he created, but it seems strange that we are now discrediting that part of psychology which caused it to become a science in the first place: the theory and the study of the mind. By making psychology scientific, we are inviting into it a large number of questions that we cannot answer through it. We might be able to take MRE scans and find correlation between outside stimuli and the brains reactions and the things it does when left idle, but we cannot move beyond a theoretical means of using this resulting science to ask ourselves questions of why people do the things they do; or rather, what makes them do what they do as prior to what a scan can tell us about what they are feeling and calculating in their brains at a point in time. The fundamental questions within philosophy such as "what is a life?" would also fail to be valid forms of inquiry as we could only answer in terms of neural links that we can prove exist.[2]

I wish to warn against an approach to philosophy and psychology which leaves us without any means of investigating questions of this nature. The same sort of problems that plagued philosophy in the 17th century will begin to plague our

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1. Kant took the knowledge that "A triangle has three sides" to be an "a-priori" truth, meaning we know it to be the case without any prior experience of the world. Note that the world "triangle" is meant to be read as the actual concept it is referring to not the word. A-priori truths are thus independent of conventional language.

2. Granted, we could define a life (as relative to a human being) as a bunch of neural linkages and emotions that we can observe, but that would give us a very unsatisfying account of what it was. All means of explaining what a life is, then, would have to step away from the scientific approach, even if they seek to explain a life based upon scientific findings.

modern investigations into the world if we allow for this to happen. Furthermore, scientific inquiry is a risky foundation for any judgements about the human mind. We have seen the consequences of this sort of behavior in the past through phrenology, a very poor means of scientific inquiry that we now find ridiculous. This is the problem with science: it is often wrong, any yet we accept certain theories and build upon them at a later point in time. Then it turns out that the theory was fallacious and needs to be discarded, but we have already (in all our confidence) dome things we cannot undo based upon our scientific discovery that we later consider utterly ignorant. We humans have, apparently, a tendency to think that we've already figured everything out. Even Aristotle (who was wrong about may things) believed that he had all the answers, and that the theory of the elements was true while the atomic theory (as proposed by Democritus) was completely ridiculous. When looking back, we often wonder why people were able to hold the sorts of beliefs that they at one point did, but let us not forget that we, also, could be just as mistaken from the perspective of future generations. Let us not put so much stock in our scientific reason then, that we throw away our humanity in the process. Furthermore, not everyone has access to laboratories from which they may conduct their own studies; only a few trained professionals even have the opportunity to work with such an expensive setup. Basing our lives upon the theoretical conclusions reached by a handful of individuals does not sound like a very good idea in light of these facts.

We see, furthermore, that many have hypothesized that sciences primary function is not to yield us truths. Angela Potochnik (Potochnik 2015) for example, believes that the primary purpose of science is to generate understanding, and that idealization, though it runs contrary to what is true, sometimes helps us facilitate understanding. Our understanding is like a mastery of the concept, which can tell us not only why something is the case, but also why it isn't through careful reflection. Furthermore, she states, that often a theories success depends upon its target audience; Democritus, who was mentioned earlier, was not able to find support for his ideas at the time because his theory departed too greatly from the norm in the discourse community of the natural sciences. Though the truth of a hypothesis is not determined in a subjective manner, it is true that we subjectively pick and choose which ideas to pursue in the first place when forming inquiry. Furthermore, it seems that we are subconsciously influenced in seeing particular patterns as more salient than others based upon personal experiences

the researchers bring into the lab with them. The confirmation bias is an excellent example of this phenomenon.

Though the scientific method is designed to help us in the finding of truth, we see that we are often influenced to think of the world in certain ways not based upon reason. Consequently, the primary "reason for being" of science is not to find truth. Just as the gods and goddesses from mythology were used at one point to explain the observable phenomena in the world, so science seeks to explain them also. It appears that we humans, more so than truth, value an explanation. Anything that can answer our questions and put a damper on the confusion is valued. We can often observe that people offered two different theories that seek to answer a question of theirs will often accept the simpler of the two without considering the other for too long; for why spend too much time deciphering it? They have an answer either way. To allow science to dominate our understanding of what it means to be human then, would be a great mistake. Of the two options: science, and empathic knowledge of other human beings through fantasy, it seems as though the latter will lead to a more accurate understanding of human beings even though it may not provide us with a technical vocabulary that allows us humans to share our knowledge in a precise manner. It is thus the attainment of this precise manner that we should seek to further and investigate[3] in order to create a clearer understanding of the human life.

II. THE NATURE OF THE SELF

Though we spend our time in this material world in which we can observe things scientifically, we must also accept that we spend a great deal of time in other worlds as well. We could, for instance speak of daydreams, which allow us to live in worlds different from our own that can sometimes teach valuable lessons, or at least grant us a means of escaping from our material reality. These two means of picturing counterfactual worlds allow us to make changes to the perceived material world, and to have experiences in such worlds. Perhaps we might also picture life through the eyes of someone else in this way. Novels create such an effect to tell

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3. It should strike the reader as strange that that we should investigate fantasy when the scientific process is flawed in its way of finding truth. But science needs not be tossed to the wayside, for as long as science can help us "understand our understanding," it remains a valid means of inquiry. Furthermore, we need not rely purely upon science as our means for investigating the mind; simple logic will often suffice.

a story, and by reading many such fictional stories, we can learn what sorts of things are in common to all us human beings. This process, is not explicit, as we do not do it consciously; through reading a narrative, we begin to feel the sorts of emotions a character must feel, and we begin to consider his thoughts. Through this process, we begin to see differences and similarities between ourselves and the character in question, which leads to an understanding of where his thoughts lie. We might suspend certain beliefs of our own while adopting beliefs that we normally would not have while picturing the world through the eyes of another person in a novel in order that we may understand their process of reasoning. In order to do so, we must also "gauge" their beliefs in order of importance.[4] In a sense, this allows us to be someone different and consider viewpoints that we usually never would because accepting them would be contrary to our own character; our ego, one might say.

Our true "self," lies therefore not in the character or ego that we foster within the material world. The collection of experiences we have in worlds of fantasy and dreams is one that we bring with ourselves to the material world. Our dreams while we are asleep have the potential to be a very different to the material world we see around ourselves. Sleep is a greatly altered state of consciousness, and as we know from altered states of consciousness, they result from us "switching" certain parts of the brain that we normally use "off." Consequently, sleep allows us to have experiences in worlds that do not contain the same laws of physics as our world, as those parts of our brains that are normally used to interpret them are suspended. This would also help explain why dreams can so rapidly change from one moment (in the dream) to another, as the brain cycles to another part to suspend and "clean" of all its use so that it may recover. (Xie, et al. 2013) But whatever world we are perceiving while we are dreaming is a world that must, logically, be consistent in virtue of itself. Here we see another important lesson that we can learn through spending time in other worlds: that there can be no contradiction within any system in order for it to be conceivable. No world can contradict its own physical laws (for otherwise they would not be the laws of this world.) It is through such experiences and the process of asking ourselves questions about them that we can rise beyond a typical understanding of our

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4. This conclusion stems from the idea that we have certain beliefs that underlie other ones. We might, for example believe that any nice day is a nice one to go to the store and buy bread, if the underlying condition that we are well and not sick have been met. In this way, we have a "layered" set of values and beliefs in a way that often seems not so apparent to us.

world as we are able to see the "deeper" reality that underlies that of the material world which we take for granted. Vastly different or not, it can be the experiences we have within other worlds that make up the self, which sometimes overrides our ego as we realize through the greater wisdom that our self has gained in other worlds that we need to act even contrary to this ego that we have created in order to promote fairness or prevent greater calamities from taking hold.

Through our experiences in other worlds, and the lessons we have gained from them, even if we cannot remember what those experiences were, it is safe to say that we draw from such experiences in making judgments and decisions in the material world subconsciously. The burden of proof for this claim rests upon anyone who would try to reject this idea. Why? Remember that our imagination is still in some way based upon the material world. Thus, the thoughts that take up our psyche continue to influence (in some way or another) our worlds. We could call these things which take up our psychic energy the "building blocks" to our imagination. Thus, there is a symbiotic relationship between the material world, and the world of our imagination, as one affects the other, which affects itself in turn – a transitive relationship.

Imagine you are trying to build a cabinet. The most prudent way to begin would be to first design a blueprint for the work. This blueprint would have to rely on prior experience of our world in order to be conceivable. At this point, the cabinet is still a theoretical entity, but as you begin building it, it will become a true, physical object. A very easy example of how our thoughts generate the presence of objects in the material world. However, a mistake might have been made in the creation of the cabinet; something you had not considered. This mistake becomes apparent as you make it, and you now have to go back and change the cabinet after altering your perception of the material world. In order to do that, you will now once again have to create a blueprint before starting, one that is created within the new, more accurate picture of reality. This simple thought – experiment describes the relationship between the material world and the worlds of our fantasies, but more importantly, it shows the self to be like the mediators between these worlds – the gateways that allow certain ideas and concepts to travel between the two worlds as they are needed.

III. THE SELF AND FREE WILL

Of course, one of the biggest and oldest problems in philosophy remains the problem of free will: do we have it, or do we not? It is tempting to think that the worlds of fantasy can prove that we do have free will, as the ability to consider other possible worlds that impact the material world could be the very thing that proves the existence of free will. Recall however, that the worlds of our thoughts are still in some way the products of the material world that we experience also. Is the self, perhaps, then also determined? Is it, as the mediator between worlds also subject to causal determination that makes it little other than a formula that has an input and an output?

The self has the ability to draw from multiple worlds, and place our conscious minds within these worlds such that we can gather experiences within them that yield us benefits in the material world. These worlds must be consistent in virtue of themselves, but they need not necessarily be consistent in virtue of each other. We can thus imagine two distinct worlds that are incompatible with each other. Take for instance the example of the counterfactual world created by Kurt Vonnegut in his piece "Harrison Bergeron" the characters live in a word in which equality is the primary value. The citizens of this world believe in equality so much so that any form of inequality between people has been done away with. At first sight, this sounds like a nice proposition, but then as we read the story, we begin to see that disturbing things are expected of talented individuals so that they cannot make unfair use of their talents. Furthermore, we see a world completely stooped in mediocrity in which no truly praiseworthy works of art or inventions of any kind are created any longer.

The world of this story is one that we would call inconsistent with the material world which we inhabit, and it is a world that appears to us as greatly disturbing. However, someone may desire a counterfactual world in which indeed everyone is equal, but also desire the counterfactual world in which everyone is free to be creative and themselves. If these two worlds are inconsistent (as with Vonnegut's world) then it follows that this person's desires cannot both be met. And yet, oftentimes, we see individuals going about life without having considered whether or not the worlds which they desire are in fact compatible with one another. Once it becomes evident that these worlds are incompatible, these individuals will have to give up one of their worlds for the other.

In the example I have given, a person might make the decision of which world to accept based upon a value judgement that roots itself in some values that have been taught to the person that they now continue to hold intuitively; thus giving us an explanation for why they do the things they do in a way that is determined. But now let us draw our attention to the sort of situation in which a person is completely clueless as to what to do based on any theory of ethics or values they have considered up until this moment. Perhaps they have to choose between a world in which either their brother or a little girl lives (and they cannot save both.) In such a situation, the person in question might be forced to quickly make a decision that he hand' thought through for very long at all that his value-theory or moral theory would not give him an acceptable answer to. In fact, it is often said of trolley-cases that they are not entirely realistic, as we can hardly expect a person who is in a difficult situation to make the sort of decision we make in a trolley-case given the (sometimes) limited amount of time to consider which action to take. It just seems very unrealistic.

When we are completely clueless and perplexed as to what the right course of action might be, that is when the human self demonstrates that it is more than just a formula for traveling between worlds, and that it has the power to make certain decisions that we cannot truly explain. This phenomenon can be observed in many cases, in fact. Sometimes we see people making decisions for reasons that they cannot explain. Yet, they are not decisions based only upon human instinct, as they run contrary to those as well. We see this a lot when considering cases of psychological altruism or the "fight or flight" response humans gain from an adrenaline rush. If we cannot determine a reason for why people sometimes make the decisions they make then somehow there must be a driving, creative force that causes people to act the way they do when there is no variable involved that could lead us to conclude that the action was determined.

Is it really correct to say, however, that there is no variable that determines our actions in such situations? It is possible that indeed there is. As Libet's experiments show (Libet, et al. 1983) the sort of actions that we take to be products of our free will are in actuality based upon certain brain states that we were in at the time of making this decision. Though Libet's experiments have long been considered the best way to refute the idea that there is such a thing as free will, but many problems have been found with his experiments, questioning his methods (Batthyany 2009) (Dennet 2003). The problem of whether or not we have free will has been one of

the more puzzling questions in philosophy, and no proof of either position has been given as of yet. I believe, however, that the argument that free will is not to be found within our immediately observable material world is the best one.[5]

IV. DISCLAIMERS

The philosophy I have just laid out should appeal to both relativist and objectivist philosophers, as the limits of our cognition can provide (for each of us) that which we subjectively believe, while the objectivist might say that these are limits in the cognitions of every human being. The relativist may challenge that a person can believe in two incompatible worlds until realizing that they were incompatible, meaning that one has to be forfeit for the other as they would then not be "right" within their own mind. However, I believe that this could even explain many things for the relativist, as the reality may in actuality be what the subject believes in on a deeper, subconscious level that he necessarily also experiences when in another world. The ability to be wrong about beliefs about the world is then, strictly speaking, not a mistake on the part of the agents reasoning and true beliefs, but more like a miniscule "mistake" made from carelessness that the agent made when evaluating the truth conditions of the world in which they actually believe. It should thus be compatible with either school of thought. I did not wish to address which school of thought between these wins out; I wanted to leave this particular analysis open to others while positing a theory of what the self is.

It has also been suggested that people who have trouble visualizing with their mind might, according to these ideas, be somehow different from the rest of us due to their lacking the abilities to travel between different worlds, and that they in essence lack the sort of self that people who do not suffer from these disabilities do. I do not wish to maintain that this is the case; and I might say that though they lack the ability to visualize, they still maintain an ability to learn from the worlds that others have created. Furthermore, their ability to visualize about other worlds might not mean that they have no means of imagining such worlds. Perhaps they have other means of doing it than by the visual sense. This is an area that I have

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5. This is an idea that we now most often credit Immanuel Kant for inventing: the "Noumenon" drives us and our creative inspiration in a way that cannot be causally determined. I wish not to talk about this view much, however, as it isn't necessary that one believes in this particular instance of such a view in order to accept that our free will lies outside of the realm of the material world.

not inquired into very much, though I invite other people to do so should they wish to if finding their own answer to these questions should give them peace.

It is also of noteworthy importance that the time that we spend within one fantasy can seem eerily real to us while we are living in it. Our persona in this fantasy world can, by the self then be given influence from any other world. Thus there exists not only a symbiotic relationship between a world of fantasy, and one of reality, but also between the worlds of fantasy themselves. We can, certainly, also draw inspiration for our own works of fiction from the works of fiction other people created. In either case, we draw upon experiences the self (at one point) had in order to attain a more accurate picture of the world in question. It is for this reason, perhaps, that a wise individual is said to have had many lives.

V. CONCLUSIONS

We do not have enough information to make any final conclusions about whether or not we really have free will or not, however, we have a good body of evidence to suggest that we humans do not only live within the material world, but spend a lot of time in other worlds as well. From these worlds, we can draw many important lessons, and bring changes to this world. These worlds are themselves, however based upon this world, in many instances, or bear striking similarities. I wish therefore, not to posit an idealist theory, though I wish also not to posit a materialist theory. The question of which of these came first is one that I wish to leave to those people who wish to find an answer to the question. What we do know, is that people who spend more time reading works of fiction have a more accurate picture of the world; at least in so far as other human beings are concerned. I wish to extend this notion and argue that the "self" is the observer or the "thinking thing" that is the awareness that keeps record of the travels between different worlds, and the features of these different worlds, even unbeknownst to the agent on a conscious level. This self then, is what allows us to not only have a better theory of mind as a result of our travels in other worlds, but one that can also give us a more accurate picture of reality for many practical purposes that affect our material world as well. What I wish also to warn about is the trend in both philosophy and psychology to be more scientific, as by being more scientific, and based upon only those things that we can measure, we neglect to investigate the very things that might yield answers to the most fundamental questions in either

of these fields. Let us not impoverish our disciplines such that they no longer have any means to answer such questions.

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