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Free to be Accountable: Extended Self as a Moderator of Cheating Among Those Primed with Determinism

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FREE TO BE ACCOUNTABLE: EXTENDED SELF AS A MODERATOR OF CHEATING AMONG THOSE PRIMED WITH DETERMINISM

by

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Abstract

The idea that free will may be an illusion has been a source of great concern. It has led to suggestions that it may be wise to avoid public discussion of this topic lest it lead to a general moral decay. This concern has seemingly been supported by research demonstrating that individuals, when primed with the notion they lack free will, tend to cheat more and prefer less retributive punishment. The current research suggests that these effects can be moderated by the introduction of a second prime. In experiment one, participants believed they were being tested on note-taking and the subsequent recall of the content of two articles when, in fact, the dependent measure was actually the degree to which, after being primed with the articles, they cheated on a math task. It was hypothesized that the cheating effect noted in prior research would be moderated by the introduction of a second prime – one that extends the concept of self beyond our dualistic intuitions. In a second experiment, it was hypothesized that this prime would also moderate the reported reduction of preference toward retributivist punishment. In each experiment, the results trended in the direction hypothesized but in neither case were they statistically significant. The difficulties surrounding methodology and reproducibility in this type of research is discussed and suggestions for improvements in experiment design are offered.

Dedication

For the love of my life Deb. Without your undying support and words of encouragement, none of this would have been possible.

Acknowledgments

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Introduction

Foundation

Most people take for granted that they are the authors of their own actions. From the weightiest of decisions such as the choice of a career, to the most mundane of acts such as deciding whether or not to pour that next cup of coffee, most humans believe they make their choices volitionally (Nahmias, Morris, Nadelhoffer & Turner, 2005). Over the past several decades, however, advances in the burgeoning field of neuroscience have led many to conclude that our perception of free will is illusory. Researchers have, for example, demonstrated that brain activity related to the performance of a physical action precedes the conscious decision to perform the act by as much as 1.5 seconds (Fried, Mukamel & Kreiman, 2010) and through the use of modern brain imaging techniques, neuroscientists have demonstrated 90% accuracy in predicting the actions of experiment participants several seconds prior to them being aware of their decision to act (Soon, Brass, Hynes & Haynes, 2008).

Discoveries such as these have led to a spate of popular books and magazine articles whose authors confidently declare that free will is an illusion (e.g. Harris, 2012). While criticism of this position does emanate from peers and colleagues who question the conclusions drawn from such studies (e.g. Dennett, 2014), other critiques have suggested that this behavior is simply irresponsible and talk such as this could result in dire consequences for society. These critics claim that if people were to lose their belief in free will, immoral behavior could ensue, thus paving the way for society to be riven by unspeakable atrocities (e.g. Laird, 2014).

It is against this backdrop that psychologists have begun to probe for answers and, to this point, the results of their work has seemingly validated those fears. For example, researchers have found that, when people are primed with the notion that there is no free will, they are less likely to behave ethically (Vohs & Schooler, 2008) and are more likely to excuse others for their moral transgressions (Shariff et al., 2014). In considering this evidence, it becomes logical to ask whether this might be one of those rare moments in the history of scientific discovery where, for the good of society we must "button our lips or change the topic of conversation" (Dennett, 2007). As research in this area expands, it is our responsibility to try to answer this important question by investigating fully the psychological processes that serve to underwrite such undesired behavioral effects. If, for example, it can be shown that these negative effects are simply the products of misconceptions or faulty intuitions, philosophers and scientists could be afforded the opportunity discuss these issues openly and with a clear conscience.

Philosophical Responses to the Free Will Problem

The notion that, given a materialistic account of the universe, rational agents are incapable of acting freely has been a source of great consternation for millennia. From the time of Democritus who, around 500 B.C.E., first posited a universe comprised entirely of what he called "atoms" (Runes, 1955), philosophers and theologians have ruminated on the implications of such an idea. If, as some have suggested, our actions and even our very thoughts essentially reduce to the causes and effects of mere "billiard balls" in motion, responsibility for our actions in any deep sense could simply vanish since, for any action we perform, it could never be said that we could have chosen to do otherwise (Billington, 2003). Albert Einstein's famous

paraphrasing of philosopher Arthur Schopenhauer's view on this distills the concept neatly into one sentence: "Man can do what he wants, but he cannot will what he wants" (Einstein, 1932).

In responding to this narrative, philosophers have largely adopted two positions. Those classified as *compatibilists* claim that there is, in fact, no problem since the concepts of free will and determinism are not mutually exclusive. Advocates of this position contend that as long as we are acting of our own volition and are not coerced by another agent or constrained by some condition of our environment, we are indeed capable of acting freely. Some also bolster their case by also noting an inconsistency with *libertarianism* - a particular incompatibilist notion of free will that many assert to be prerequisite to holding people accountable (Dennett, 2003). Not to be confused with the political ideology, libertarians view human decision-making as a process that is carried out by some non-physical essence that controls our actions independent of the influences of any causal chain that exists in the physical universe. Critics of the libertarian view point out that this concept of an immaterial agent is incoherent since, through the process of partitioning ones agency from any manner of physical causation, those advocating for this account essentially reduce the ultimate causes of our decisions to acts borne of randomness (Moreh, 1994). Philosopher Daniel Dennett alluded to this critique in the subtitle of his book *Elbow Room* (1984) wherein which he lays out his own compatibilist case. Contrary to the libertarian argument, he counts his own view as among "*The varieties of free will worth wanting.*"

Incompatibilists view the idea of having free will under a deterministic model as impossible and hold that the consequences of such a belief pose an intractable moral problem (Sosa, 2007). One category of incompatibilism - *Hard Determinism* – asserts that free will is

indeed impossible under the naturalistic model of our universe and further makes the claim that, unless we can somehow break from this causal chain of physical events set in motion by the big bang billions of years ago, moral accountability in any meaningful way is illusory (Pereboom, 2007). Hard determinists can trace their lineage to French scientist Pierre-Simon Laplace who, in 1814 suggested that if some all-knowing entity (referred to now as Laplace's Demon) knew the momentums and exact positions of every atom in the universe, such knowledge could theoretically allow for prediction of the outcome of all future events (Dennett, 2003).

Proponents of the libertarian free will position, such as contemporary philosopher Peter van Inwagen (1975) agree with the ethical issues raised by the hard determinists and also view free will as incompatible with determinism. The aforementioned libertarian view often attempts to overcome the problem of accountability by asserting that the actual composition of who we are is immaterial, thus divorced from any of the effects of physical causation. Under this view, the essence of "self" is seen as being detached from any causal chain entailed by a materialistic universe, and humans can be viewed as moral agents who are ultimately responsible for their decisions and behaviors (e.g. Egnor, 2015). The idea that there is a different substance which accounts for all our thoughts and is responsible for our actions is known as substance dualism or Cartesian dualism in honor of Rene Descartes who formally stated the argument for an immaterial mind in his *Meditations on First Philosophy* (1641/1960).

Some materialists have instead adopted a form of naturalistic dualism, concluding that mind and consciousness are an emergent property which, although dependent on and originating in a physical universe, is essentially a different substance (Searle, 2002), the most commonly held brand of dualism is immaterialist and asserts the existence of a supernatural "soul" or

"spirit" that inhabits the machinery of our physical bodies and exerts control over us (Musolino, 2015). This idea of a soul is commonly described as having the ability to transcend death and, in some religions, may inhabit a procession of physical bodies, jumping from one to another as each in the series dies (Bering, 2006). This kind of thinking has been shown to be ubiquitous and, while some offer cultural explanations for this phenomenon (Scheper-Hughes & Lock, 2009), others suggest that its prevalence results from the fact that we may be "hard wired" to intuit that we exist inside our heads (Bloom, 2004; Starmans & Bloom, 2011). Indeed, research from both cross-cultural and developmental perspectives have shown that not only are people dualistic, they may be so intuitively (Chudek et al., 2013; Kelemen, 2004). In one experiment that applied a cognitive approach to the *culture versus intuition* question (Forstmann & Burgmer, 2015), researchers theorized that, if dualistic concepts are indeed intuitive, those people who do not incline toward the dualistic view may be employing cognitive resources in order to "override the default tendency to disassociate minds from bodies" (p.229). In their study, the authors hypothesized that, if dualism is intuitive, when participants were subjected to an increase in cognitive load, they would be less likely to be able to override this intuition toward mind-body dualistic beliefs – and this is precisely what they found.

Setting aside the obvious discomfort caused by the idea that we may in fact all be finite creatures, the ramifications for an incompatibilist view that rejects substance dualism are profound. From a religious perspective, it would shake to the core several foundational theological assumptions. For example, some Christian notions relating to ultimate judgment and everlasting punishment would be severely undercut if were shown that we aren't actually responsible for our actions (Talbott, 2014). From a secular perspective, finding out that free will

is, in fact, illusory, could have even greater consequences. Commentators have reasoned that if it were to be shown that we are actually not the authors of our own actions, society would descend into nihilism and people would begin to behave as they wished – released from the shackles of responsibility by the idea that there can be no right or wrong (Craig, 2011). Indeed, even compatibilist philosophers writing on this subject have expressed similar concerns. In a discussion with several other public intellectuals, Dennett (2007) once described how, in preparation to present the compatibilist case in his book *Freedom Evolves*, he was advised by fearful critics to "simply avert your eyes" and "not look too closely at the issue." Dennett went on to confess that, prior to his book going to press, he had to think long and hard about the possibility that his words and ideas could have a devastating impact. In recent years, the work of psychologists interested in this problem has seemingly validated his concern.

Empirical Validation of Fears

In June of 2014 an article appeared in the pages of Scientific American magazine which sounded the alarm that widespread knowledge of the hard determinist narrative on free will proffered by many neuroscientists and philosophers of mind actually risks rending society at its very seams. The authors, psychologists Azim Shariff and Kathleen Vohs (2014), presented a brief account of recent empirical work performed both by themselves and by colleagues that has, over the past 8 years, seemingly converged on the idea that when people are primed with the notion that free will is illusory, less than desirable effects upon prosocial behavior result. When compared to participants placed in a control condition, research has shown that people who are primed with the notion of a deterministic universe become more impulsive (Rigoni et al., 2012), are less likely to help others (Baumeister, Masicampo & DeWall, 2009), are more likely act

aggressively (Baumeister et al., 2009), are more prone to display cheating behavior (Vohs & Schooler, 2008), and are more likely to prefer lenient sentences for criminals (Shariff et al., 2014). This latter result, while on the surface appearing rather innocuous, has led some to reason that, if leniency is taken too far, it could result in deleterious consequences for society since its healthy functioning depends on adequately punishing those transgressors who violate its laws (Shariff & Vohs, 2014). This finding takes on even more significance for its implications regarding the debate that surrounds the relative merits of retributive justice versus consequentialist justice since studies have shown that when participants are primed for determinism they are more likely to prescribe consequentialist rather than retributive punishment (Shariff et al., 2014). The consequentialist approach to punishment holds that punishment should be meted out on the basis of what is best for society as a whole and views as secondary whether or not a person suffers for their transgression. Retributive justice, on the other hand, only concerns itself with this latter aspect and does not take into account the societal utility of punishment (Shariff et al., 2014).

Of the aforementioned body of research, one frequently cited study used deception in order to test the hypothesis that people will be more likely to cheat if they are first exposed to a vignette which informs them that determinism has been demonstrated to be true (Vohs & Schooler, 2008). In this experiment, after being exposed to their respected primes – deterministic for the experimental condition and neutral for the control - participants were asked to solve a series of math problems which were presented on a computer screen. In the briefing beforehand, however, each was told that a line of code was inadvertently left in by the programmer which causes the correct answer to appear on the screen shortly after the problem is presented. They

were then presented with an opportunity to cheat. It was explained to them that the programmer was now out of town, therefore unavailable to fix the issue but, luckily a workaround exists that will help to get the experiment off the ground. Each participant was told that if they simply pressed the space bar as soon as each problem appeared, the answer would not show up and the experiment could proceed normally. They were told that the experimenter had no way of determining who did or didn't use the workaround but they were asked, nonetheless, to please take the math test honestly. Unbeknownst to the participants, the program was actually rigged to record the number of times the spacebar was not depressed in the time required to prevent an answer from showing. In this study, a higher score meant more cheating and their hypothesis that the anti-free will prime would result in more cheating was confirmed as the mean of the group receiving the prime which described humans as not free was 14.00 (SD = 4.17) whereas that of the control who received a neutral prime was 9.67 (SD = 5.58).

Despite the presence of studies such as this which serve to add to a seemingly growing consensus on this issue, the fact remains that not all people who are either primed with deterministic concepts or who are determinists beforehand, behave unethically. If the stakes are indeed as high as many insist, and there are actual differences with regard to the way this information is processed between this group and the group for whom a deterministic prime results in unethical behavior, it becomes a matter of practical importance to learn the nature of these differences. In light of this, the current research sets aside the question of whether we actually have free will or not, or whether scientists and philosophers should guard against the idea of determinism as a concept unfit for public consumption. Rather, it will endeavor to ascertain whether the addition of a prime that offers a non-intuitive notion of self will affect the

manner by which this information is processed and subsequently acted upon. If successful, it has the potential to provide a means by which to mitigate the unpalatable effects of scientists and philosophers merely engaging in academic discussion.

Maintenance of the Moral Self

The theory of self-concept maintenance tells us that people desire to maintain a view of themselves which paints them in a positive light (Mazar, Amir & Ariely, 2008). When faced with the prospect that one is engaging in behavior that could be construed as immoral, a state of cognitive dissonance may arise in their mind if the moral valence of their behavior does not align with their self-concept as a moral person (Shu, Gino & Bazerman, 2011; Tsang, 2002). Cognitive Dissonance is the theory that a feeling of psychological discomfort occurs when a person holds two or more contradictory ideas within their head simultaneously. When this feeling arises, in order to alleviate this dissonance, and re-establish harmony, one of the ideas must be either discarded or rationalized (Festinger, 1957). In the particular case of a person contemplating their own cheating behavior, the dissonance takes the form of a juxtapostion of the realization one is acting unethically with the desire to view oneself as ethical. To alleviate the dissonance caused by these mutually exclusive intuitions and maintain one's self-concept as a moral agent, a process of moral rationalization takes place whereby the unethical behavior can either be relabeled euphemistically, recategorized or reconstrued as ethical, or be excused through a process of displacing responsibility (Bandura, Barbaranelli, Caprara & Pastorelli, 1996). With regard to such displacement, people may rationalize their actions as being caused externally by the force of another agent or by society itself. A classic example of this type of shift in responsibility comes from Stanley Milgram's famous experiment (1974) in which

participants were implored to electrically shock a person beyond the safe limit established by the researcher in the briefing. In the subsequent debriefings, the participants who went beyond the limit described knowing that their actions were wrong but deferred responsibility to the researcher who was compelling them to continue.

For the current research it is suggested that, in the case of one who behaves unethically after reading a deterministic prime, responsibility for one's actions can readily be displaced to aspects of that person which are now opportunistically regarded as disengaged from their intuitive dualistic notion of self. If, for example, one does not intuit their own genetic makeup or biochemistry to be a part of that which they feel comprises their essence, the concept of self can be easily reduced in size to comprise only that which they experience phenomenologically "between their ears." In this way, responsibility for a person's moral transgressions may be conveniently shifted to some aspect or aspects of their physical makeup which they no longer consider to be a constituent of their self-concept. In writing on this subject, Dennett spoke to this very idea when he made the insightful comment that "if you make yourself small enough, you can externalize virtually everything" (2003, p.238). Interestingly, citing findings in neuroscience, defense attorneys in U.S. courtrooms have seized upon this tactic and have made increasingly common the defense strategy dubbed the "brain made me do it defense" (Sample, 2013). By this example, it is easy to see how, to paraphrase the words of neuroscientist and author Sam Harris, the issue of one's conception of self and notions of free agency are essentially two sides of the same coin (Sommers & Pizarro, 2014).

An Extended Self as a Moderator

In stark contrast to the dualistic notion of self which is shrunk so small as to fit only that which we experience phenomenologically, some psychologists and philosophers have proposed an extended view of "self" which purports that our mental life cannot even properly be described as simply the result of brain activity alone. Under this view, which emerges from research in embodied cognition, the brain and body are seen as an integrated system. Researchers have demonstrated this idea by, for example, showing that the relative warmth of a cup of coffee a person is holding will influence the degree to which they perceive another as being a warm person (Williams & Bargh, 2008) and by showing that using one's hands while thinking will improve memory recall (Rauscher, Krauss & Chen, 1996). To quote neuroscientist Antonio Damasio : "Body and brain are engaged in a continuous interactive dance" (2009).

Some philosophers of mind have even pushed this notion further by offering the radical view that the self is so extended that it can subsume aspects of our environment. In their paper describing this concept, Andy Clark and David Chalmers (1998/2010) use the example of Otto who cannot remember the address of the museum he wants to visit but knows he has it written in a notebook. They offer this as an example of the cognitive offloading of a task akin to how we use our fingers to count or how we move scrabble tiles in order facilitate forming a word. Some philosophers have even suggested that our social milieu may serve as host for an extended view of self (Cash, 2010).

The current research endeavors to determine whether two of the priming effects noted in the literature - an increase in observed cheating behavior, and the tendency for people to find criminals less culpable for their actions – can be moderated by the presence of an additional

prime which recasts the self as more extended than the notion most people normally intuit. It is suggested that, when one seeks to rationalize oneself as moral in the face of their own immoral behavior, one's dualistic intuitions serve to opportunistically regard those aspects related to self that they might classify as "other" (genes, or even their own neuronal pathways) as disengaged from what they experience phenomenologically to be their "true self." These disengaged parts then become a convenient repository toward which responsibility can be shifted. It is suggested that, for those who are primed with an embodied and extended view of self, this tactic of disengagement becomes less available and they will, to a degree, become immunized from the undesired effects of receiving a deterministic prime. Regarding attitudes toward retributive punishment, since it is suggested that priming for an extended view of self will moderate the effects noted in prior research, it follows that an inclination toward leniency will be moderated as well.

As stated previously, in the first experiment, participants believed they were engaged in a study related to cognitive functioning when, in fact, they were given an opportunity to cheat and their behavior recorded. Participants in both the control and experimental condition were first primed with the notion there is no free will. The control group then read a neutral prime, and the experimental group was primed with the concept of an extended self. In a second experiment people were again primed in the same manner but this time, rather than recording their behavior, their attitudes toward punishment were assessed through the use of a short survey. In Experiment 1 it was hypothesized that the presence of the extended self prime would moderate the effects of cheating noted in prior research and result in a lower incidence of cheating behavior. In Experiment 2, it was hypothesized that the extended self prime would again moderate the effects

seen in prior studies by resulting in attitudes which are less consequentialist and view criminals as more deserving of retributive punishment for their behavior. Support of these hypotheses produce would demonstrate a potential avenue by which the negative results of considering a deterministic worldview may be moderated.

Method and Results

Experiment 1 Method

Participants

Participants were recruited from amongst the student body of the University of Central Florida through the use of flyers, in-class announcements located in Appendix A, and its listing on the psychology department's recruitment website called SONA. Each participant was either given extra credit toward a course requirement or given SONA extra credit for their participation. Additionally, as a further enticement, potential participants were informed they had the opportunity to win a $25.00 American Express gift card if they completed a math task in the shortest amount of time.

No participant was excluded for failure of the manipulation check. In all 35 students participated – 18 in the experimental group and 17 in the control. One participant was excluded from the control group for admitting during the funneled debriefing that he didn't buy the cover story. This exclusion resulted in 16 participants' data from the control group being used. Of the final 34 participants 17 were women and 17 were men. With respect to age, 67.6% of the participants fell in the under 21 category, 23.5% were between 21 and 30, 5.9% were between 31 and 40 and, 2.9% were between 41 and 50. Whites or Caucasians accounted for 47.1% of the participants while blacks or Africans (not of Hispanic origin) comprised 23.5% of the total. Hispanics and Asians accounted for 14.7% and 8.8%, respectively. 5.9% did not report their ethnicity. Regarding religiosity, the breakdown was as follows: 35.6 % Protestant Christianity, 20.6% Catholic Christianity, 11.8% were atheist, 11.8% reported not thinking or caring much about religion, 8.8% agnostic, 5.9% Buddhist, 2.9% Muslim, and 2.9% spiritual but not religious.

Materials.

Deterministic Prime. Both the control group and the experimental group initially received a deterministic prime via the reading of a short article that made a strong case that free will is an illusion and that we aren't responsible for our actions in any deep sense. This prime can be found in Appendix B. Roughly half of this prime was adapted from several paragraphs written by neuroscientist Sam Harris in his book Free Will (2012), while the balance of the prime was written for the purpose of the current study.

Experimental Primes. Following the deterministic prime, one half of the participants read an essay on embodied cognition and the other group read a neutral essay. The control group read a neutral vignette having to do with space probe technology and the experimental group read one that described research in embodied cognition and advances the idea that what we consider to be our self is much more than what we experience going on "between our ears." The vignettes related to space technology and embodied cognition are located in Appendices C and D, respectively. The word counts for each of these primes were equal in order to balance any potential fatigue effects. The space probe vignette was adapted largely in whole from an article on the Discovery Science website (Howell, 2014). The extended self prime was written by the investigating researcher.

Manipulation Check. In addition to the primes, an 8 question multiple-choice quiz related to each article was given resulting in each participant answering 16 questions. This quiz can be found in Appendix E. While this reading comprehension phase of the experiment was not designed to detect cheating, it later served as a tool to substantiate internal validity by allowing for the opportunity to check that the participants indeed understood the material. Prior to carrying out the study, it was decided by the researcher that any participant who was unable to

correctly answer more than half these questions would be excluded from the final data. In addition, by the very nature of some of the questions in these quizzes, priming for these concepts continued. Scrap paper and a pencil for note taking during the reading portion was provided as well as a Scantron sheet upon which the quiz answers were be recorded.

Computer Program. Next, a math task was presented on a laptop computer. This math task involved answering 20 problems, each in the form of a long sequence of additions and subtractions: e.g.16-5+7+8-13-9+16+3-14-10+14. For the first 10 questions, if the spacebar was not pressed, the answer appeared after about six seconds. For the next 10, the answer appeared after about one second delay if the spacebar was not pressed. The software was written such that the participant could not continue on to the next question until the current one was answered correctly. This math task software, designed to detect cheating behavior was by other researchers including Vohs & Schooler (2008) and von Hippel, Lakin & Shakarchi (2005). The original math task program used by Vohs and von Hippel was procured for use in the current study. See Appendix F for a screen shot of a representative question from the math task. Similar deceptive techniques have been used by other researchers in similar research

Instruction Sheet. A printed instruction sheet pertaining to both the reading portion and the math task was given to each participant for use in the testing room. This typed document included a line that was handwritten and appeared as if hastily added at the last minute. This inserted line described the procedure for stopping the answers from showing up prematurely. This sheet is located in Appendix G and it should be noted that the text written therein in red actually appeared in normal black ink on the actual instructions sheet but was crossed out. Above it, in the space between steps one and two, was handwritten: “Hit the spacebar AS SOON AS

each question appears so that the answer doesn't show up. Then, try to figure out each problem as fast as you can."

Demographic Questionnaire. Last, participants completed the demographic questionnaire. This questionnaire collected participant demographic information relevant to this study. This questionnaire can be found in Appendix H.

Additional Materials. A standalone digital timer/stopwatch was employed in order to record the length of time it took each participants to perform the math task. The digital timer was used to reinforce the illusion that the math task program was incapable of recording any of the actions of the participants.

Procedure.

Participants arrived individually and were told that they would be participating in a study investigating how performance on a reading comprehension test and a subsequently administered math task might be affected by differences in how people take notes while studying. In fact, this was a ruse designed to hide the true nature of the study which was to record the relative amount of cheating that would occur between the experimental and control groups on the math task portion. As an incentive, each participant was told that, upon completion of the experiment, a $25.00 gift card would be awarded to whoever completed the math task in the shortest amount of time. Each participant was assigned a number and assured of anonymity so that, except for the winner and the experimenter, no one would know how he or she scored. Participants were instructed to contact the researcher at the end of the semester and to refer to their participant number to see if they had the fastest time. The winner would then provide contact information in order to receive their card. Upon completion of the briefing, consent was obtained.

In the briefing, participants were told that they would be given two short articles to read as well as several sheets of blank paper upon which to take notes. For this phase, they were instructed to take up to 10 minutes to read the two articles they were given and to take notes so that the researcher could use the digital timer to record when they began so that they did not exceed their allotted 10 minutes. They were told that they could not use these notes during the follow-up multiple-choice test and they were advised to concentrate on concepts and names only and to disregard any numbers or dates mentioned in the articles. Upon finishing this first assignment, participants were instructed to collect all the written materials, including their notes, and exit the testing room to walk to the original briefing office where the experimenter would collect the written material and hand them two 8 question quizzes (one on each article) and a Scantron sheet on which to mark their answers. They were then accompanied by experimenter to the testing room in order to make sure the timer was reset and to ensure they understood all the instructions related to the upcoming math phase.

Prior to the math phase participants were told that twenty math questions would be presented on a screen and each question must be answered correctly before the program can advance to the next question. They were told that if at any time they had questions concerning the math task, or the computer started misbehaving, they were to go and ask the experimenter for help. They were also informed that the person who scripted the math test mistakenly left in a line of code intended for debugging the software and this mistake has resulted in the unwanted effect of each correct answer popping up on the screen shortly after each problem is presented. Additionally, they were told that the experimenter is up against a hard deadline and the coder is now unavailable to affect the necessary changes in time to meet the deadline. Lastly, each

participant was informed that a workaround existed whereby a person can prevent the correct answer from appearing by immediately pressing the spacebar as soon as each math problem appears. Each participant was then instructed to employ this workaround during the math skills phase. The degree to which people cheated on this phase of the experiment served as the actual dependent variable. Each participant was instructed to begin the math task when they were ready and to concurrently start the digital timer. They were instructed to stop the timer as soon as the math task was completed. After of the math task, they were asked to return to the briefing office where they completed a short demographic questionnaire and were debriefed. The instructions used by the researcher were not scripted but care was taken so that each step in the process was explained in the same manner.

Upon completion of the demographic questionnaire, a funneled debriefing technique was used to assess whether the person might have become suspicious during their participation. Three questions were asked: 1. Do you have any thoughts or reactions regarding the experiment you just participated in? 2. Do you think there was any significance to the content of the articles you read? 3. During the math phase, did the thought ever cross their mind that your actions were actually being recorded by the computer? It was decided prior to the study that any participant who indicated being suspicious of the cover story would be excluded from the final data used. Lastly, each participant was debriefed and informed of the true nature of the experiment.

Experiment 1 Results

A oneway, between subjects ANOVA was used to test the research hypothesis that participants who read both an article anti-free will article and an article that presented an extended view of self would demonstrate less cheating on a math task than those who read the

same anti-free will article paired with a neutral article. An alpha level of .05 was established to determine statistical significance. In order to properly assess the degree of cheating, the number of times each participant cheated was divided by the total number of opportunities each had to cheat. This was necessitated by the fact that the math task program was written such each participant was given a new opportunity to cheat with each wrong answer. The control group averaged 24.06 opportunities and failed to press the space bar an average of 8.06 times. The experimental group's averages were 24.61 and 5.17, respectively. These cheating rates were then compared. An alpha level of .05 was applied to the analysis. The results showed a mean difference between groups that was not statistically significant, $F(1,32)= 2.98$, $p=.094$. The means and standard deviations for the groups were 0.34 (SD=0.29) and 0.20 (SD=0.14), respectively. Although the difference between groups was not statistically significant, is worthwhile to note that the results were significant at an alpha level of 0.1.

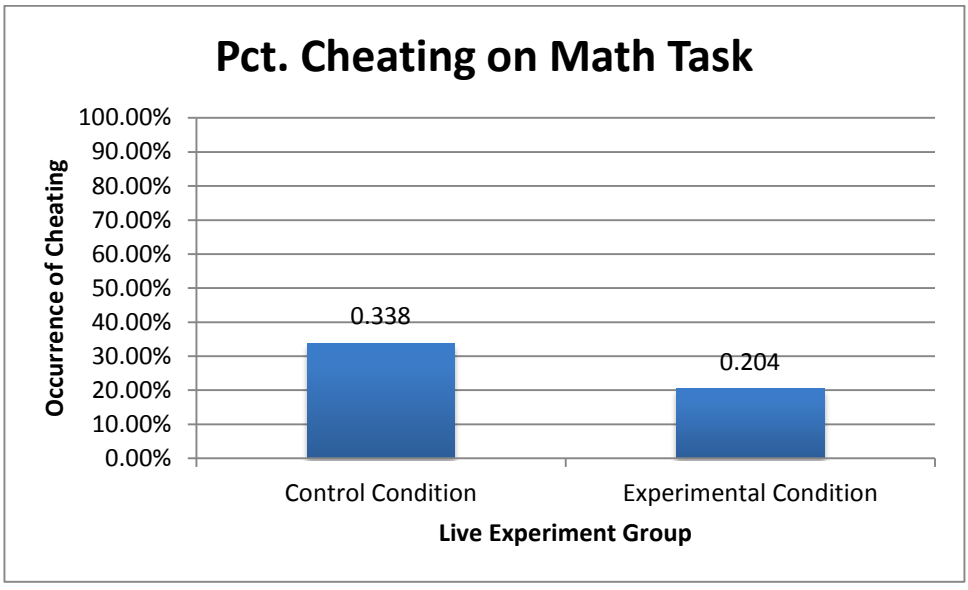


Figure 1: Percentage Cheating on Math Task

Experiment 2 Method

Participants.

Participants were recruited from amongst the student body of the University of Central Florida via the UCF Psychology department's online SONA survey system. Overall, 278 students participated but, due to a manipulation check failure rate of .27, only 203 participants' data were included in the final analysis. Of the 203 whose data were included 103 fell in the experimental group and 100 in the control group. 140 were women, 61 were men, and two participants did not report their gender. Regarding age, 62.6% of the participants fell in the under 21 category, 28.6% were between 21 and 30, 5.9% were between 31 and 40, 1.5% were between 41 and 50, and 1.5% were between 51 and 60. Whites or Caucasians accounted for 53.2% of the participants while blacks or Africans (not of Hispanic origin) comprised 13.8% of the total. Hispanics comprised 22.2% of the total and Asians and native Hawaiians accounted for 1.0% and 0.5%, respectively. 2.0% did not report their ethnicity. Regarding religiosity, the breakdown was as follows: 30.5% Catholic Christianity, 27.1% Protestant Christianity, 9.9% did not think or care much about religion, 9.9% spiritual but not religious, 8.9% agnostic, 7.4% atheist, 2.5% other, 1.5% Muslim, 1.0% Jewish, 1.0% Hindu, and 0.5% Buddhist.

Materials.

The same vignettes described above in Experiment 1 were used, as well as a brief two question survey of attitudes toward retributive punishment. Since no validated scale exists for measuring such attitudes (Shariff et al. 2014, supplemental materials), the current researcher adopted the conceptual definitions of retributivism and consequentialism used by Shariff et al (2014), and also used the same two questions and associated Likert scale from which those authors measured attitudes. These definitions and questions have been

included in Appendix I. These materials were uploaded to the website Survey Gizmo. Survey Gizmo is an online resource that allows researchers upload surveys, polls and questionnaires which can then be accessed by research participants.

Procedure.

After giving consent to take part in this online experiment, participants were linked via SONA to the materials on Survey Gizmo. There, they were instructed to first read their respective pair of primes such that the control group read the deterministic prime and the neutral prime and the experimental group reviewed the former as well as the extended self prime. This was followed by instructions to answer four questions relating to the material they had just read. This phase served as a manipulation check and the questions that were used can be found in Appendix E. For the neutral prime manipulation check, questions 3 and 8 were selected. Those who read the deterministic prime answered questions 6 and 7, and those who read the prime on an extended self answered questions 3 and 6. They were then asked to read the definitions of both retributivism and consequentialism and to complete a short survey relating to their views on retributivist and consequentialist punishment. Finally, they were asked to complete the same questionnaire used in Experiment 1 except for the last question which would have been redundant.

Experiment 2 Results

A oneway, between subjects ANOVA was used to test the research hypothesis that participants who read both an anti-free will article followed by an article that presented an extended view of self would report more favorable views toward retributive justice than those who read the same anti-free will article followed by a neutral article. The mean Likert scores on

retributivism for the Control and Experimental Groups were 4.17 (*SD*=1.73) and 4.43 *(SD*=1.72), respectively. While the preference indeed trended toward that hypothesized, the difference was not statistically significant $F(1,201)= 1.13$, $p=.290$.

Upon reviewing the data, the researcher noticed a potentially interesting "hydraulic" effect that occurred in the Experimental Group whereby the average Likert score relating to consequentialism fell in accordance with a rise in the average score on retributivism. This resulted in the researcher's decision to run a second analysis in order to test whether there was any statistical significance to the difference between groups with respect to the two mean differences between consequentialism and retributivism within each group. In order to test for this, the means of each group's Likert scores relating to retributivism and consequentialism were first compared within each group. In the experimental group, the average Likert scores relating to views on retributivist and consequentialist punishment were 4.42 and 4.54, respectively. This resulted in a mean difference of 0.12 (*SD*= 2.69). In the control group, the average Likert scores relating to retributivist punishment and consequentialist punishment were 4.14 and 4.74, respectively, resulting in a mean difference of 0.57 (*SD*=2.67). A oneway, between subjects ANOVA was used to test for statistical significance. An alpha level of .05 was applied to the analysis. The results showed a mean difference between groups that was not statistically significant, $F(1,201)= 1.52$, $p=.220$.

Although there was no statistical significance found in either means comparison, it is interesting to note that, when compared to the control group, the experimental group saw both a rise in views toward retributivism and a fall in views toward consequentialism. This lends a

degree of support to the hypothesis that those who read the extended self prime would have their views shifted toward the retributive end of the punishment spectrum.

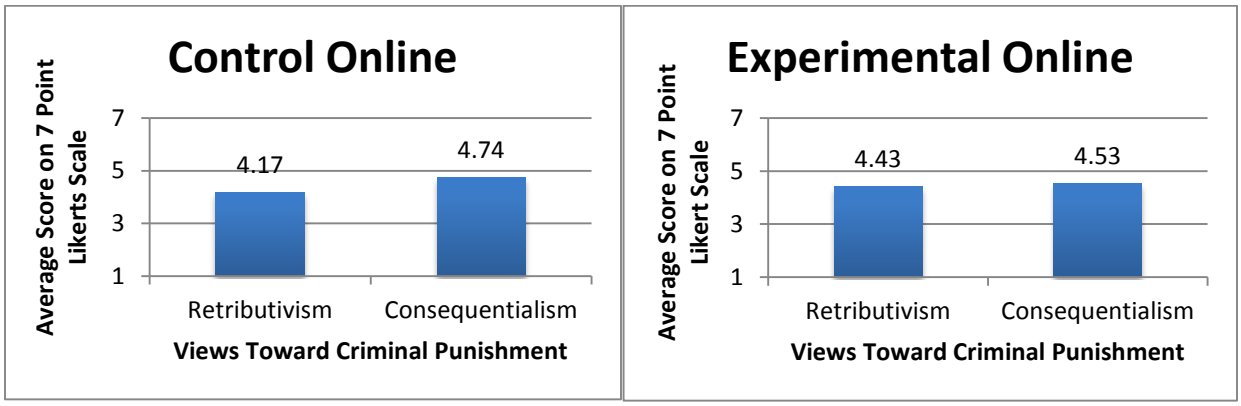


Figure 2: Views Toward Retributivist/Consequentialist Punishment

Discussion

Experiment 1

While this experiment did not yield a statistically significant difference with regard to rates of cheating between groups at an alpha level of .05, a trend in the direction hypothesized was noted. In fact, it is worth mentioning that these results would have indeed been significant had an alpha level of 0.1 been chosen. Due to the logistics involved with carrying out a live deceptive study such as this, to date, only 34 people have participated, short of the researcher's target amount of 60. The researcher plans to continue this study with the reasonable hope that, if this trend were to continue over a much larger sample size, statistically significant results at an alpha level of .05 may follow.

This area of research is also rife with concerns and questions regarding reproducibility and methodology. In fact, the very article which precipitated this current investigation, Vohs and

Schooler's free will study of 2008, has been used as the basis for several attempts at reproducibility and, thus far, each has met with less than favorable results. One such study found that, although cheating did occur more frequently amongst those in the deterministic condition, the large effect size reported by Vohs and Schooler was not present. In the same study, the researchers also noted that they discovered a flaw in the manner by which Vohs and Schooler analyzed their data thus resulting in their erroneous report of a large effect size (Embley, Johnson & Giner-Sorolla, 2015). In another study which used 150 participants, the group primed for determinism actually cheated less than the control group (Zwaan, 2013).

While these failed attempts to reproduce Vohs and Schooler's results might point to a disconfirmation of the notion that reading deterministic material could affect behavior, it could also point to a myriad of methodological issues that render such research difficult to perform and, subsequently, to replicate. First and foremost, there is the matter of how believable the experimenter is when they relate the cover story about the math task. In the current investigation, using a funneled debriefing, only one participant was excluded due to their suspicions whereas Zwaan (2013, March 18) noted that fully one half of his participants did not "buy" the cover story. It is also noteworthy that Zwaan's experiment was carried out entirely online. That people may behave differently after interacting with a live experimenter versus a set of computer prompts is yet another variable to consider.

Additionally, cross cultural considerations should be taken into account as well as differences inparticipants' demographics such as age or religion. Two such examples that contrast with the demography found in the current investigation of college age Americans are

that, in Zwaan's study the participants' average age was far higher at 33, and Embley, Johnson & Giner-Sorolla's study took place in the U.K. Another area of concern is that Vohs reports that about half of the 30 participants she and Schooler ran were active members of the Mormon church (Zwaan, 2013, March 21). This is not a trivial point since views on free will often come deeply embedded within a theological context and generalizing from such a sample may be unwarranted.

Experiment 2

Given its nature as a relatively brief online survey of opinions relating to criminal punishment, this experiment had far greater participation than Experiment 1 but it also suffered from a much higher degree of manipulation check failures. Perhaps due to its online nature, of the four questions that were asked that related to the material, roughly one quarter of all participants were excluded for not being able to answer three or more correct. In the control group 25.4% percent were excluded for their seeming lack of comprehension of the material while the failure rate among the experimental stood at 28.5%. It can be surmised that the lack of face to face interaction between the experimenter and participants may have resulted in many of the online participants feeling free to simply "go through the motions" in order to obtain their extra credit. As was found in Experiment 1, the difference between the two groups in this experiment followed the direction that was hypothesized by the experimenter but it too lacked statistical significance.

General Discussion and Future Research

While neither experiment produced significant results, the fact that both sets of data trended in the directions hypothesized by the experimenter, points to a need for further experimentation. Additionally, since the primes introduced in both experiments were designed to tug on intuitions over a very brief time span, it may be suggested that greater exposure to the ideas presented may well produce more profound shifts in behavior and attitude. This study's lack of overall significance is, to a degree, counterbalanced by the fact that data in both experiments trended in the direction hypothesized by the researcher. This coupled with the aforementioned methodological difficulties of similarly constructed experiments leaves open the question of whether or not extending one's concept of self beyond that which we normally intuit can actually serve to moderate cheating behavior or to nudge one's views on criminal punishment toward the retributive end of the spectrum. In this complex area of study where philosophy and psychology intersect and where intuitions regarding one's conception of self - both as a moral agent and a physical locus – surely interact, greater methodological precision and standardization is surely required.

While this study was not designed to replicate Vohs and Schooler's original findings, it nevertheless built upon theirs' and the research of others which suggests that priming individuals with deterministic ideas results in largely unsavory shifts away from prosocial behaviors and attitudes. This current research endeavored to examine whether this widely reported effect could be moderated. In light of the aforementioned difficulties regarding replication in this area of research, a number of suggestions for improvements to the current experimental design can be offered. Regarding Experiment 1 of this study, one such improvement could involve the

incorporation of a third group that would receive two neutral primes rather than any combination of deterministic or extended self primes. This group would serve two purposes. First, it would provide a built-in reproducibility check to further reassess Vohs and Schooler's original claims. Second, it would serve as a means of establishing the degree to which reading the extended self prime may be moderating the effects caused after being initially primed with determinism.

Other avenues that could improve research in this area may include differentiating between such studies that are conducted online versus those that involve face-to-face interaction between experimenter and participant. As noted earlier, in the current study, there was a marked difference in manipulation check failure rates between the two experiments. Based on this observation, an entirely new thread of research could emerge that explores whether personal interaction plays a role in increasing participants' efforts to comprehend the material compared to those receiving online administration of the material. Additionally, improvements could come by way of increasing participants' exposure to the study's priming materials. One potential means to accomplish this task could be to extend exposure to the ideas contained within the primes. For example, this could occur over the course of a semester-long college class. This extended period would allow for greater assimilation of the concepts and may result in more dramatic behavioral and attitudinal shifts.

Appendix A: Recruitment Flyer

For a mere 45 minutes of your time you can

And qualify to win a $25.00 gift card

by participating in a research project related to cognitive functioning.

Participants will be tested on their comprehension of two short articles then asked to take an easy math quiz and fill out a short demographic questionnaire. That's all there is to it!!!

Just for participating, each person will be paid $3.00 in cash and will be given the opportunity to win an additional $25.00 gift card!

Testing will take place at UCF building 3 on the Palm Bay campus of Eastern Florida State College, UCF building 7 on the Cocoa campus of EFSC and in building 2 on the main UCF campus in Orlando.

For inquiries and to schedule your participation contact:

Vinny Iula at:

vincent.iula@knights.ucf.knights

Appendix B: Determinism Prime

Are We Truly Free?

The names Socrates, Plato and Aristotle have echoed through the ages as quintessential examples of the depth of thought that emanated from ancient Greece. Perhaps no ancient, however, was more ahead of his time than the lesser known Democritus. For it was he who suggested in the 5th century B.C.E. that the universe was made of tiny elements he called atoms. These atoms he said were the equivalent of tiny billiard balls in motion knocking against one another – each affecting the next as their motions give rise to a universal causal chain. Of course the implication of this is that, since our brains are made of atoms, our thoughts and actions should be subject to this same manner of causation as well. Indeed, for centuries since, philosophers have pondered the question: When we perform an act, was there ever a moment when it can truly be said we could have chosen to act otherwise? 19th century scientist French Pierre-Simon Laplace was the first to publish a scholarly work dedicated to exploring this issue. In "A Philosophical Essay on Probabilities", Laplace advanced the idea that if an all-knowing being were to exist who could keep track of the positions and velocities of every atom in the universe, it would be able to predict the outcomes of any and all future events.

Breakthroughs over the past several decades in the field of neuroscience have now begun to settle this issue and experimental work has led to the conclusion that our wills are simply not of our own making. This work has demonstrated that thoughts and intentions emerge from background causes of which we are unaware and over which we exert no conscious control. According to many scientists and philosophers, we do not have the freedom we think we have. If a person's choices are determined by a certain pattern of prior causes – say neural activity, which is in turn the product of bad genes, a bad upbringing, lost sleep, or random cosmic ray bombardment – what can it possibly mean to say that they are free?

As neuroscientist Sam Harris puts it: "The popular conception of free will doesn't even correspond to any subjective fact about us – and introspection soon proves just as hostile to the idea as the laws of physics are. Seeming acts of volition merely arise spontaneously (whether caused, uncaused or probabilistically inclined, it makes no difference) and cannot be traced to a point of origin in our conscious minds. A moment or two of serious self-scrutiny, and you might observe that you, in fact, do not decide the next thought you think. Free will is an illusion."

Appendix C: Neutral Prime

The ISEE-3 Reboot Project

A decades-old spacecraft appears to be in great health despite being abandoned in the solar system for the better part of two decades, the private team working to revive the NASA probe says. The International Sun-Earth Explorer 3, a space probe launched in 1978 but retired in 1997, is now being given the chance to resurrect its career as a group of determined citizens are trying to put the bird back in the business of space exploration.

All instruments are on and the International Sun/Earth Explorer 3 spacecraft, or ISEE-3 for short, is responding to hails from its new team of commanders, which hopes to send the probe on new adventures in deep space. The team, called the ISEE-3 Reboot Project, is working out of a former McDonald's restaurant location near NASA's Ames Research Center in Moffett Field, California. So far, the team has been successful in gathering information on where the spacecraft is moving, how fast it is spinning and how much power it has.

ISEE-3 has ample power and its instruments are all turned on, although how well they are functioning will require further investigation, said team co-project leader Keith Cowing. "We need to understand [the spacecraft] before we fire the engines for the main thrust," he told Space.com. That will likely come on June 17, and it is intended to eventually put ISEE-3 in a stable spot where it can reliably communicate with mission controllers here on Earth.

The team made contact with the spacecraft in late May under a Space Act Agreement with NASA. It's the first time any private entity has taken over a spacecraft, leading to careful discussions on both ends about what is allowed. The current agreement with NASA runs through June 25, but Cowing said it's an incremental date expected to be extended. The project's ultimate goal is to make the spacecraft available for more science, although what ISEE-3 will do is still not known. Since being launched in 1978, the spacecraft has been a comet chaser and a solar probe. NASA ceased communications with the probe in 1997.

The spacecraft first, however, needs to be moved. Cowing projects the first firings will need to change ISEE's speed by about 20 feet a second. He said the best "guesstimate" of fuel available shows plenty of margin: there's enough to alter the spacecraft's speed by 492 feet a second

Appendix D: Extended Self Prime

The Extended Self

Recent work in psychology and philosophy has made it abundantly clear that we are much more than we ever thought we were. Evidence now points to the existence of a "self" that is embodied and extended - in other words, that which we perceive to be us is not wholly dependent upon what occurs in the brain but rather relies on aspects of our physical bodies as well.

One line of evidence that leads to this conclusion comes from research which has shown that cognition can actually be improved if, while we think, we "get our bodies in on the action". In one study, experimenters found that words can be retrieved more easily from memory if people used hand gestures while thinking. Likewise, children have also been shown to count better if they get their hands involved. From work such as this, it is clear to see how our minds and bodies are indeed not separate but are actually integrated to form an interacting system we call "us". The "self" – that which we intimately identify with as who we are, is not simply what we experience consciously between our ears. Rather, we are embodied – our "selves" spread across the expanse of our physical bodies which in turn results from the combination of our genes, development and experiences.

Philosophers of mind such as Andy Clark and David Chalmers have pushed this view even further by showing how some aspects of our environment can essentially become extensions of who we are. They build their case by noting that, much like how we file away memories that remain unavailable until consciously recalled, people can, for example, store information in an address book to be recalled when needed. This offloading of a cognitive task to the physical environment occurs more often than we realize. For example, each time we count on our fingers or rearrange combinations of tiles to form a word in Scrabble, our "selves" becomes extended into our bodies and into our environment.

Who we are is much more than that feeling of self-awareness we call consciousness. Rather, the feeling of "self" we all experience is extended and woven into a rich tapestry that includes our conscious and unconscious thoughts, intuitions, memories, bodily sensations, genes, developmental past and environment. As eminent neuroscientist Antonio Damasio so eloquently puts it: "Body and brain are engaged in a continuous interactive dance."

Appendix E: Reading Comprehension Tests

Free Will Exam

1. Who was the Greek philosopher who proposed that the universe was made of atoms?

a. Plato

b. Aristotle

c. Democritus

d. Socrates

2. The author states that our intentions arise from what?

a. our conscious thoughts

b. our occipital lobes

c. background causes of which we are unaware

d. neuroscience

3. Neuroscientist Sam Harris is quoted as saying _____

a. we all have free will

b. free will is a song by the rock band Rush

c. we don't have free will

d. free will is an illusion

4. **If an all-knowing entity knew the positions and velocities of every atom in the universe it could:**

a. change the past

b. do nothing with that information

c. determine the outcomes of all future events

d. determine the outcomes of only a few events

5. Democritus was from_____

a. Greece

b. Rome

c. Persia

d. The Bronx

6. Breakthroughs in what field have shown we have no free will?

a. biology

b. quantum mechanics

c. particle physics

d. neuroscience

7. The author of this article is making the claim that_____

a. we all have free will

b. no one has free will

c. free will is an amazing song by Rush

d. nothing in life is free

8. According to the author, which of these ultimately causes our behavior?

a. our own free will

b. our genes and/or our upbringing

c. both a and b

d. neither a nor b

ISEE-3 Exam

1. What is the name of the space probe being resurrected?

a. Voyager

b. Sun-Earth Explorer 3

c. Apollo 11

d. Cassini-Huygens 13

2. The team that is trying to resurrect the probe is comprised of_____

a. NASA engineers

b. Air Force officers

c. private citizens

d. college professors

3. What fast food chain's former restaurant is the team working from?

a. Wendy's

b. Dunkin' Donuts

c. Burger King

d. McDonalds

4. Who is one of the team leaders for this project?

a. Keith Cowing

b. Keith Carradine

c. Brian Keith

d. Duncan Keith

5. The probe once served as_____

a. a predictor of space weather

b. a space telescope

c. a communications satellite

d. a comet chaser

6. In which state is the team located?

a. Florida

b. Texas

c. California

d. Alabama

7. According to the name given to this project, that probe is being_____

a. reborn

b. refurbished

c. reinvented

d. rebooted

8. According to the article, the probe's instruments_____

a. are on and responding to hails

b. not responsive

c. damaged beyond repair

d. unreliable

Self Exam

1. Who were the philosophers mentioned in this article?

a. Andy Warhol and David Frost

b. Andy Clark and David Chalmers

c. Arthur C. Clarke and David Brin

d. Neil Peart and Geddy Lee

2. This article tells us that *who we are* is more than_____

a. what goes on between our ears

b. a feeling

c. a collection of atoms

d. just skin and bones

3. According to the author, our "self" is comprised of_____

a. our deepest desires

b. our conscious thoughts alone

c. what we decide to call ourselves

d. our thoughts – conscious and unconscious, memories, genes, developmental past, and environment

4. Who said "Body and brain are engaged in a continuous interactive dance."

a. Antonio Banderas

b. Roy Clark

c. Antonio Damasio

d. David Chalmers

5. Research in embodied cognition shows that we often think better if_____

a. take time to reflect

b. we simultaneously use our hands

c. close our eyes

d. avoid distractions

6. In this article, we learn that the "self" is _____

a. an unchanging quality we are born with

b. less than we imagine

c. exactly what we think it is – no more, no less

d. more than what we think it is

7. Rather than view the "self" as merely our conscious thoughts, the author sees it as_____

a. extended

b. constrained

c. imaginary

d. very small

8. Which of the following is a part of who we are?

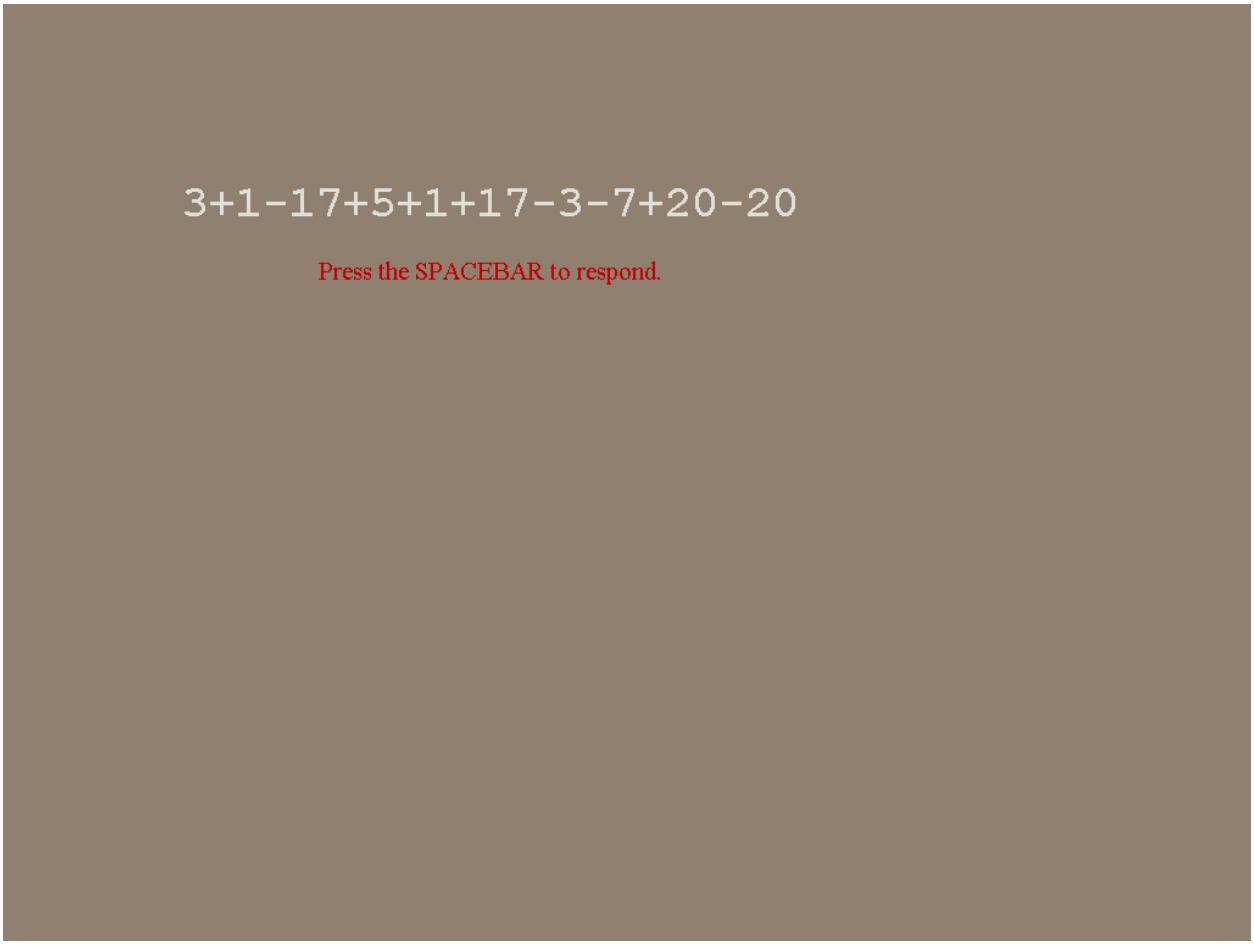
a. our genetic history

b. our unconscious thoughts

c. both a & b

d. neither a nor b

Appendix F: Math Task Screenshot


3+1-17+5+1+17-3-7+20-20
Press the SPACEBAR to respond.

Appendix G: Live Participant Instructions

Instructions

Reading Comprehension Phase

1. Please read the two articles and feel free to use the scrap paper provided if you wish to take notes. Please start the timer when you begin so that you don't exceed the 15 minutes allotted for this phase.

2. When you are finished reading the articles, collect them, as well as your notes, and return the materials to the experimenter. You will be handed a quiz and a Scantron on which to put your answers. The researcher will accompany you to the testing room in order to load the math task program and ensure the timer is reset properly.

Math Phase

1. After the experimenter leaves, begin the math task when you feel ready but ***please remember to start the timer so that your performance can be measured.***

2. For this test, 20 math questions will appear in succession. Figure out each one as fast as you can and then press the spacebar when you are ready to respond. If you answer it incorrectly, it will allow you more time to figure it out. Each question must be answered before you can continue.

3. When the program says you are finished, stop the timer and return to the office.

Appendix H: Demographic Questionnaire

Demographic Questionnaire

Please circle the answer to each question as it describes you. **If you are uncomfortable answering a particular question, you may skip it.**

1. Gender

Female

Male

Trans

2. Age group

Under 21

21-30

31-40

41-50

51-60

Over 60

3. Ethnicity

American Indian or Alaska native

Asian

Black or African American (not of Hispanic origin)

Hispanic or Latino

Native Hawaiian or other Pacific islander

White or Caucasian (not of Hispanic origin)

4. Religious affiliation

Agnostic

Atheist

Buddhist

Christian (Catholic)

Christian (Protestant)

Hindu

Muslim

Spiritual but not religious

Don't think or care much about religion

Other (please describe:_____)

5. In what type of area were you raised?

Urban

Suburban

Rural

Small town

6. Political orientation

Very conservative

Conservative

Moderate

Liberal

Very liberal

7. Sexual orientation

Primarily attracted to members of the opposite sex

Primarily attracted to members of the same sex

Attracted to members of both sexes

Other (please describe:_____)

8. Marital status

Single

Married

Divorced

9. Current job/education status (circle ALL that apply)

Working full time

Working part time

In school full time

In school part time

Neither working nor in school

10. Do you think things happen for "a reason"?

Yes

No

Not sure

11. Do you believe that or consciousness lives on after we die?

Yes

No

Not sure

12. Do you believe we have free will?

Yes

No

Not sure

13. In your mind, human nature is basically:

Good

Bad

A mix of both good and bad

Neither good nor bad

14. Please indicate on a scale from 1 (strongly disagree) to 7 (strongly agree), the degree to which you agree with the following statements:

A. I feel that the most important motivation in criminal punishment is that criminals should suffer for their crime – regardless of whether or not society actually benefits from that punishment.

1 2 3 4 5 6 7

B. I feel that the most important motivation in criminal punishment is that society should benefit from the punishment of a criminal – regardless of whether or not the criminal actually suffers.

1 2 3 4 5 6 7

Appendix I: Retributivism/Consequentialism Survey

Retributivism and Consequentialism

Philosophers discuss two primary motivations for punishment – *retributivism* and *consequentialism*.

Retributivist motivations are those that seek to extract a punishment from a transgressor for the transgression they have committed. Underlying the retributivist motivation is the idea that transgressors deserve to suffer for the suffering they have caused to their victims and society.

Consequentialist motivations, on the other hand, are solely concerned with the social utility that punishment can produce - such as deterring others from committing future crimes, rehabilitation to ensure that transgressors do not repeat their transgressions, or incapacitation whereby the ability for the transgressor to commit another crime is removed (by locking them away, for instance). Whether or not the trangressors suffer as a result of these punishments does not matter to consequentialists.

Retributivism and consequentialism is not an either/or situation, as both motivations impact the American justice system.

Please indicate on a scale from 1 (strongly disagree) to 7 (strongly agree), the degree to which you agree with the following statements:

1. I feel that retributivism should be an important motivation in criminal punishment.

1 2 3 4 5 6 7

2. I feel that consequentialism should be an important motivation in criminal punishment.

1 2 3 4 5 6 7

Appendix J: IRB Approval Letter

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Shannon N. Whitten** and Co-PI: **Vincent M. Iula**

Date: **June 10, 2015**

Dear Researcher:

On 06/10/2015, the IRB approved the following human participant research until 06/09/2016 inclusive:

Type of Review:	UCF Initial Review Submission Form
Project Title:	Free to be Accountable: Extended Self as a Moderator of Cheating among those Primed with Determinism
Investigator:	Shannon N Whitten
IRB Number:	SBE-15-11312
Funding Agency:	
Grant Title:	
Research ID:	N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu .

If continuing review approval is not granted before the expiration date of 06/09/2016, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

All data, including signed consent forms if applicable, must be retained and secured per protocol for a minimum of five years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained and secured per protocol. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

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