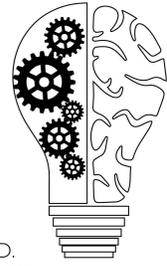


Episode 084: Free Will in Psychiatry & Psychotherapy: Part 1

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There are no conflicts of interest for this episode.

On this episode of the Psychiatry and Psychotherapy Podcast I have a conversation with Matthew Hagele, a soon to be 4th year medical student with a masters in bioethics. We will talk about the history, the why, and the cultural importance of free will. We will examine the implications of free will on mental health.

This is the first of a three part series. We hope they provide interesting application information for your own practice.

Introduction:

There has been a war about the subjects of determinism and free will since the very beginning of recorded writings. Within that war, some people use “science” as their main defense, but they present a viewpoint that no scientific experiment could prove. The problem with this is that the general public takes the statement as fact and then acts on it.

Free will and determinism are important to the mental health of individuals because there is a strong tie between our beliefs in this and our general mood, happiness, and sense of meaning in life. The question of whether or not free will exists centers around how much choice we have versus how much is determined by our genes and environment.

This article and corresponding episode are a bit more philosophical than my usual posts, but hang in with me, and hopefully we can ponder together and have an open mind about it all. Though it seems ethereal, it is, as I said, very important for mental health workers to grasp the overall meaning behind this so we can bring it down to an individual patient level and help them understand meaning in their own lives.

In this first article we will outline what free will is and bring in some studies that clearly show the danger of believing in a purely deterministic worldview.



Why Talk About Free Will Now?

There are a lot of difficult situations in life and the world in general, especially right now. Humans need to feel like we have the ability to choose how we suffer, and how we will respond to those circumstances. For example, during the global pandemic and quarantine, people can only choose their own attitude towards the circumstance, not the actual circumstance.

We want to be able to choose to suffer versus having no choice—we want to exercise free will. This is best illustrated in these three quotes:

“He who has a why to live for can bear with almost any how.” - Nietzsche

“The way in which a man accepts his fate and all the suffering it entails, the way in which he takes up his cross, gives him ample opportunity—even under the most difficult circumstances, to add a deeper meaning to his life. It may remain brave, dignified and unselfish. Or in the bitter fight for self-preservation he may forget his human dignity and become no more than an animal.” - Viktor Frankl (survivor of a concentration camp, psychotherapist, and author of [Man's Search for Meaning](#))

“We who lived in concentration camps can remember the men who walked through the huts comforting others, giving away their last piece of bread. They may have been few in number, but they offer sufficient proof that everything can be taken from a man but one thing: the last of the human freedoms—to choose one's attitude in any given set of circumstances, to choose one's own way.” - Viktor Frankl

Some people believe that free will doesn't exist—that we are products entirely of our environment and genes, that each subsequent neurological firing leads to the next one, and there is no choice in the midst of that. Essentially, they believe we are not deciding anything at all, we are dualistically one thing or another, and it's all determined by neural wiring.

For example, those who don't believe in free will think you either *are* racist, or you *are not* racist based on neural wiring, and that there is no free will in that choice. (There are, however, studies that show that those who believe in free will are less likely to do racist things.)

Often, our ideas and actions are founded in what we inherited from our environments. By understanding free will, we can begin to unpack those thoughts and bring them to the forefront instead of letting them linger in our subconscious and dictate our lives, actions, and behaviors

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on autopilot. For mental health workers, having conversations around free will with ourselves, and with our patients, can help us unearth some long-standing beliefs we've held that might keep us stuck.



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Not everyone believes in free will...

The War of Ideas

As we mentioned, some people don't believe in free will, which, as we'll cover later in the podcast and articles, can lead to negative emotional consequences.

One example of how someone (like the famous author and neuroscientist, Sam Harris) doesn't believe that free will exists is the existence of incels. An incel is a young man (usually) who feels shunned by women and is involuntarily celibate. They consider themselves unattractive, awkward, or any other form of not thought of as "mate" material. Because of this, they come to believe they will never be able to have and maintain a monogamous relationship with a female (the majority of incels are males who are attracted to females).

Because incels believe at a fundamental level that biological determinism has kept them stuck, they fill their lives with other things to dissociate from the feeling of loss of a meaningful romantic relationship.

As a therapist, it's my job to help people work through this type of feeling that someone like an incel would have. I believe that there is hope through mental health for people who want to change the way they view the world. The way we view our ability to change influences our ability to change and better our situation. I think the negative aspect of not believing in free will would subsequently lead someone to stop working and stop trying to reach for a better life. I believe (and science shows) that they could stop developing as a person and assume a fatalistic or deterministic view of the universe.

Another example of non-belief in free will is the claim by some neuroscientists (Sam Harris is among them), that the absence of free will is scientifically proven and societally beneficial. Although I believe that for Sam Harris, his worldview has helped him have compassion for psychopaths in jail, thinking that they don't have a choice in being a criminal, however as stated in my prior episodes on the [brain science of psychopathy](#) and [Ted Bundy](#), these are complex phenomenon without a simple neurotransmitter that can be fixed.

To date, however, we have found that psychotherapy and medications don't change a person's level of criminality.

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What does the data say?

Is a belief in free will helpful or hurtful?

Below are some of the highlights. We will further dive into the methodologies and results later.

Studies show that being **primed to believe in free will** leads to:

- **Decreases in racial prejudice**
 - In the condition of belief in free will ($M = 3.10$, $SD = 0.53$), the participants expressed greater pro-black attitudes than did those in the condition of disbelief in free will ($M = 2.62$, $SD = 0.63$), $t(61) = -3.28$, $p = .002$, Cohen's $d = 0.82$ ([Zhao, X., Liu, L., Zhang, X. X., Shi, J. X., & Huang, Z. W. \(2014\)](#))
- **Setting more personal goals**
 - "Participants in the free will condition also expressed more goal-directed content than control participants, $F(1, 114) = 10.65$, $p < .01$, $\eta^2 = .09$, whereas participants induced to disbelieve in free will did not differ from participants in the control condition, $p = .4$, $\eta^2 < .01$. Thus, bolstering belief in free will caused people to set more goals than either neutral controls or participants who were induced to disbelieve free will." ([Crescioni, A. W., Baumeister, R. F., Ainsworth, S. E., Ent, M., & Lambert, N. M. \(2016\)](#))

Studies showing being **primed to doubt free will** leads to:

- **A reduced willingness to help**
 - Participants in the determinism condition ($M = 5.33$, $SD = 1.52$) were less willing to help than were participants in the free will condition ($M = 6.27$, $SD = 1.19$), $F(1, 61) = 4.84$, $p = .03$, and less helpful than participants in the neutral control condition ($M = 6.23$, $SD = 1.28$), $F(1, 61) = 4.99$, $p < 0.03$ ([Baumeister, R. F., Masicampo, E. J., & DeWall, C. N. \(2009\)](#))
- **Acts of impulsive selfishness**
 - When confronted with decisions they must make on impulse, however, participants contributed 30% less to the public pot after having their belief in free will challenged ($\$.28$, $SD = 21.074$ v. $\$.40$, $SD = 14.482$; $d = .67$, 95% CI = 1.14 to .2") ([Protzko, J., Ouimette, B., & Schooler, J. \(2016\)](#))
- **Increased frequency of cheating**

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- “Analysis of the main dependent measure, degree of cheating, revealed that, as predicted, participants cheated more frequently after reading the anti-free-will essay (M 5 14.00, SD 5 4.17) than after reading the control essay (M 5 9.67, SD 5 5.58), $t(28) = 3.04$, $p < .01$ ” ([Vohs K. D., Schooler J. W. \(2008\)](#))
- Let’s just note here that the participants merely read an essay that made them doubt free will, and they changed their behavior.
- **Increased social conformity**
 - “Participants in the anti-free will condition conformed significantly more (M=34.58, SD=4.27) than participants in the pro-free will condition (M=30.41, SD=4.10), $F(2, 51)=9.47$, $p<.01$. Participants in the anti-free will condition also conformed significantly more than participants in the control condition (M=29.82, SD=3.55), $F(2, 51)=8.10$, $p<.01$. ([Alquist J. L., Ainsworth S. E., Baumeister R. F. \(2013\)](#))
- **Impulsive antisocial tendencies**
 - Since the task was designed to encourage fast responses (Fig. 1), intentional inhibition required self-control. . .Our interpretation is that the reduced intentional inhibition in the no-free will group reflects degraded self-control” (1488). ([Rigoni D., Kuhn S., Gaudino G., Sartori G., Brass M. \(2012\)](#))
- **Decreased behavior adjustment after error**
 - “A correlation analysis was performed to test the hypothesis that the reduction of the post-error slowing effect was related to the change of the belief in intentional control in the no-free will group. A strong correlation was found in the no-free will group ($r = .73$, $n = 20$, $p < .0001$), but not in the control group ($r = .33$, $n = 20$, $p = .15$)” ([Rigoni D., Wilquin H., Brass M., Burle B. \(2013b\)](#))
 - Of note this change is a similar thing seen in people with ADHD and schizophrenia at baseline.
- **Increased aggressive behavior**
 - “Participants who had read the deterministic sentences gave their partners more of the unwelcome hot sauce (M = 17.8 mg, SD = 16.3) compared to participants who read the sentences supporting free will (M = 9.4, SD = 11.6), $F(1, 48) = 6.95$, $p = .01$. Thus, inducing disbelief in free will led to more aggression as compared to inducing belief in free will.” ([Baumeister R. F., Masicampo E. J., Dewall C. N. \(2009\)](#))
- **Perceiving life as less meaningful**
 - “Participants in the determinism condition (M = 1.7, SD = .68) perceived life to be significantly less meaningful than did participants in the free will condition (M = 1.28, SD = .23), $F(1, 26) = 5.247$, $p = .03$. The effect size was large (Cohen, 1988), $d = 0.82$.” ([Crescioni, A. W., Baumeister, R. F., Ainsworth, S. E., Ent, M., & Lambert, N. M. \(2016\)](#))

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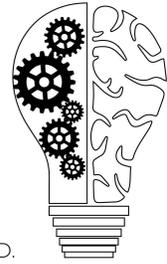
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Studies show that our static beliefs about free will (positive or negative) are associated with:

- **Belief in free will is associated with better job performance**
 - “The relationship between belief in free will and overall job performance was significant ($r=.30$, $p=.014$). In addition, belief in free will was positively correlated with four of the five measures of workplace performance (see Table 2): work effort ($r= .33$, $p = .008$), consistency ($r = .27$, $p = .03$), positive social impact, ($r = .35$, $p = .005$), and general assessment ($r = .30$, $p = .016$).” ([Stillman, T. F., Baumeister, R. F., Vohs, K. D., Lambert, N. M., Fincham, F. D., & Brewer, L. E. \(2010\)](#))
- **Belief in free will is associated with less prejudice**
 - As a measure of prejudice, the social distance between Han Chinese and Tibetan Chinese was measured. Social distance was measured with a version of the Bogardus Social Distance Scale and the inverse was then plotted against Bfree will with (Beta = -0.316 , $t(65) = -2.67$, $p = .010$, $R^2= 0.10$) ([Zhao, X., Liu, L., Zhang, X. X., Shi, J. X., & Huang, Z. W. \(2014\)](#))
- **Belief in free will is associated with lower social conformance**
 - “There was a significant negative correlation between belief in free will ($M=3.54$, $SD=.75$) and conformity ($M=2.46$, $SD=.56$), $r(37)=-.34$, $p=.03$. Participants who expressed a stronger belief in free will reported conforming less than participants with a weaker belief in free will” ([Alquist J. L., Ainsworth S. E., Baumeister R. F. \(2013\)](#))
- **Belief in free will is positively associated with life satisfaction**
 - “Critically, the belief in free will was positively correlated with life satisfaction and PA [positive affect] but negatively correlated with NA [negative affect].” [Li, C., Wang, S., Zhao, Y., Kong, F., & Li, J. \(2017\)](#)
- **Belief in free will is associated with more gratitude, greater life satisfaction, lower levels of perceived stress, and a higher commitment in relationships.**
 - Bfree will has a 0.56 correlation with subjective happiness ($p<0.01$), 0.31 correlation with meaning ($p<0.01$), 0.32 correlation with gratitude ($p<0.01$), 0.59 correlation with life satisfaction ($p<0.01$), 0.35 correlation with self-efficacy ($p<0.05$), 0.27 correlation with forgiveness ($p<0.01$), and 0.21 correlation with relationship satisfaction ($p<0.05$) ([Crescioni, A. W., Baumeister, R. F., Ainsworth, S. E., Ent, M., & Lambert, N. M. \(2016\)](#))
- **Belief in free will is associated with higher academic performance**
 - “The relationship between the belief in free will and spell-checking performance was significant. Participants who reported a stronger belief in free will correctly identified more spelling mistakes ($r = .20$, $p = .033$) and did so in less time ($r = -.20$, $p = .029$)”

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- “The belief in free will exhibited a positive correlation with the final course grade (N = 614; $r = .08$, $p = .043$) and a similar effect for the overall GPA of the semester (N = 518; $r = .09$, $p = .035$.” [Feldman, G., Chandrashekar, S. P., & Wong, K. F. E. \(2016\).](#)
- **Doubt of free will is associated with reduced helping behavior**
 - Results showed that disbelief in free will predicted a lower number of hours for which participants volunteered, $\beta = -.30$, $t = -2.24$, $p < .03$. ([Baumeister R. E., Masicampo E. J., Dewall C. N. \(2009\)](#))

Many patients are programmed to think they are just a product of their environment or their genetics. But believing this can damage their behavior. Giving someone the understanding of their internal locus of control—shifting beliefs from “the world is happening to me” to “I can make change and movements in my life that will lead to changes in the world” is really important to mental health.

The history of the philosophy of free will

What is the historical importance of free will as a concept? It has affected a variety of subjects and has existed at the root of many cultural institutions including philosophy, religion, and systems of justice.

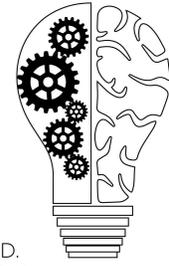
Philosophical

The Greeks made the link between free will and the practice of improving character, and therefore improving your life. Plato and Aristotle relied on a concept of free will in their ideas of eudaimonia or “the good life,” which **required practice and control of the will** to reach character perfection.

In Plato’s Republic, both the ideal government or ideal person would have the philosopher king and queens (guardians, love truth, love learning, free from greed and lust for power) rule over the warriors (bravery, courage, virtuous, selfless) and merchants (libido, desire, sexual gratification, food, drink). Ordering the reason, drives, and desires is like strength training which requires practice. Through voluntary hardship you can train your body to get stronger, or your mind to not always let your appetites drive you.

The ordering of the self represents the beginning of a type of free will that culminates with practice and **control of the will to find the mean or balance between the extremes of each virtue**, i.e. bravery finding a place between cowardice and foolhardiness. [Hecht, J. \(2014\). Freedom of the Will in Plato and Augustine. *British Journal for the History of Philosophy*. 22\(2\). 196-216.](#)

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Immanuel Kant relied heavily on the concept of **proper motivation or an aligned will** to determine if an act was morally praiseworthy.

Without control of the will, an individual could not act from a sense of duty or act morally. For Kant, **acting from a sense of duty and**

corralling your will to match that duty is the only meaningful type of action. Some therapists learn cognitive empathy, and are really good at it, and can give accurate empathy in the moment. But the best

therapists do their own work, so their own internal desires and longings are aligned with their mission (so when they give empathy it has heart and consistency behind it). Why? Because people can sense hypocrisy. So, through a purification of ideas, practicing as we talked about above, we can match duty with will, which leads to good actions.

John Stuart Mill also used his own idea of free will to explain the human capability to **shape and develop one's own character by controlling our desires**. Though not as strong a proponent of free will as other philosophers, he still found the concept useful.

By controlling our desires, we develop character, and what fires together neurologically, wires together. We have a multitude of desires, but we need to subjugate them, even if some of the desires are weaker initially. For example, a man falls in the train tracks right in front of you. You will have both a screaming desire for self-preservation, and also a slight whisper of the herd instinct. The herd instinct is subtle, but you decide to magnify it, and jump in to rescue the man. Through practice, you are able to make that choice more clearly next time. Free will is much more about thought manipulation than thought generation.

There is a good ACT strategy that fits well here. You can have a patient draw a box, then put all the words that describe them in the box. They may write they are a father, depressed, anxious, down, lonely, hungry for connection, often hard working. Then you say to them, "you are the person who observes what is inside of the box. You also observe what you are bringing into or out of the box, and you can choose what goes in or out of there. You have the ability to change these things."

Religious

Many world religions rely on the concept of free will to determine an ultimate reward or punishment.

Christianity

St. Augustine, an early Christian philosopher, and first author to write an autobiography of self-analysis that looked honestly (and often critically at himself) viewed the will as essential for choosing to turn toward God or to sin. Different Christian denominations have their own concept of free will or even of

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predestination (anti-free will). However, a majority of denominations rely on the concept of free will to explain everything from the existence of evil to the righteousness of God.

Buddhism

The concept of free will is not prominent in Buddhism, but the Buddha does claim that individuals are morally responsible for what they will to happen. This moral responsibility exists within a web of cause and effect, which is also called determinism.

In terms of the contemporary free-will debate, the Buddhists believe in “free action” but have no conception of “free-will,” as a self-determining power that moral agents somehow possess.

Free and mindful agents know what their needs are and what their preferences should be; and, on the basis of that knowledge, they can separate desires from cravings, defined as desires that either cannot be fulfilled, or for things that are simply not needed. Moral freedom lies in the ability of agents to form desires that are consonant with their needs and personal circumstances. [Gier, N. F., & Kjellberg, P. \(2004\). Buddhism and the freedom of the will: Pali and Mahayanist responses. *Freedom and determinism*, 277-304.](#)

Islam

“In Islam, every individual is entitled to freedom of belief, conscience and worship. While Islam presents itself as the truth, **individuals are given the free will to choose between truth and falsehood**, including the freedom to accept or deny the Creator Himself. The Qur'an said: 'The Truth is from your Lord. Let him who will, believe, and let him who will, reject (it)' (Qur'an 18: 29).” [Yousif, A. \(2000\). Islam, minorities and religious freedom: A challenge to modern theory of pluralism. *Journal of Muslim Minority Affairs*, 20\(1\), 29-41.](#)

Judicial

Many judicial systems also rely on the concept of free will, despite differing motives. If a system is designed to purely punish rule-breakers, it is assumed that **rule-breakers are only punished since they had the opportunity to not break the rule**. If, instead, the goal is to rehabilitate and educate rule-breakers, the system is assuming individuals have some level of free will that can be molded or shaped to avoid future infractions.

For many people—alcoholics and drug abusers included—their free will has been impacted by their disease. When under the influence of addiction, free will is decreased. Still, a huge decision someone *can* make is to change their environment.

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There is an exception within the judicial system for crimes committed: insanity defense. When someone commits a crime and is declared criminally insane, they are determined to be so by many different factors.

Here are some other thoughts on free will in the judicial system:

“Note that none of the law’s general criteria for responsibility or excuse refer to free will or its absence. Lack of action, lack of rationality, and compulsion all excuse, but none of these conditions has anything to do with free will.” - Morse

“Lawyers and forensic practitioners often speak and write as if these are “free will” problems, as if lack of free will were a synonym for lack of action, irrationality, or compulsion. Nevertheless, free will is doing no work whatsoever independent of these genuine excusing conditions and it thus threatens to confuse the issues.” - Morse

“To satisfy the non-responsibility justification that underlies mental health laws, all include three criteria: a mental abnormality, legally relevant behavior (or potentially legally relevant behavior), and a causal relationship between the legally relevant behavior and mental disorder.” - Morse

[Morse, S. J. \(2007\). The non-problem of free will in forensic psychiatry and psychology. *Behavioral sciences & the law*, 25\(2\), 203-220.](#)

The worst criminals, unlike the criminally insane psychotic person who does something bad while psychotic, or the drug addict who does something while using drugs, does things like abusing children with planning and conscious decisions.

Current controversies around free will

Before moving into current controversies surrounding the existence and implications of free will, it is important to define some terminology and demonstrate some similarities and differences between free will and other associated concepts.

- **Determinism**: all actions and decisions follow inevitably from previous events. Essentially, our biology, genes, environment defines us.
 - **Neuroessentialism**: “the definitive way of explaining human psychological experience is by reference to the brain and its activity from chemical, biological, and neuroscientific perspectives” (Schultz, 608).
 - A subset of deterministic thought that has real-world impact on mental health



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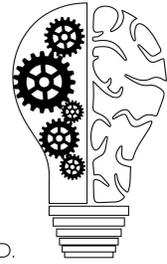


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- Incompatibilism: free will cannot exist in a deterministic universe (often used to connect deterministic discoveries to the impossibility of free will)
- Compatibilism: free will can exist in a deterministic universe if you define it properly (controversial)
- Indeterministic: laws govern many aspects of the physical world, but human decisions are relatively independent. Or, put simply, we can make our own decisions.
 - Free Will Belief (free willB) or Belief in Free Will (Bfree will) is often measured and manipulated in the papers cited below. Since the existence of free will is a much more complex analysis, Bfree will is used as a substitute. Even if free will does not exist, a belief in free will could still have important individual and societal implications.
 - Personal Choice/Control: is similar to free will, but distinct in its realm of influence. While neither has a universal definition, free will is often described as an internal process or regulation. However, personal choice or control is more commonly linked to influence over an external situation or opportunity.
 - Free Will Definition: The following definition of free will is inspired by Baumeister et al. and will be used throughout the rest of this podcast. ([Baumeister, R. F., Crescioni, A. W., & Alquist, J. L. \(2011\)](#))
 - free will is a blanket term composed of self-control, rational choice, planning behavior, and active choice. It can be viewed as synonymous with self-regulatory behavior.
- **Distinction of free will**: Though free will is similar to other concepts such as locus of control or personal choice, it remains distinct and has a unique value.
 - Belief in free will is unique from similar alternatives such as personal choice and personal control. ([Gooding, P. L., Callan, M. J., & Hughes, G. \(2018\)](#))
 - Trait-level belief in personal control was a stronger predictor of satisfaction with life than free willB.
 - **Study 1**: Amazon Mechanical Truk, Single-item graphical slider [0-100] (free will), 5-item personal control scale [1-5], 2-item personal stress [1-6], Satisfaction with Life Scale [1-7] (SWL).
 - **“Free will belief positively correlated with sense of personal control, and both correlated positively with Satisfaction with Life and negatively with perceived stress” (2).**
 - “A multiple regression analysis showed that sense of personal control, $b = 0.85$, $\beta = 0.49$, $SE = 0.098$, $t(281) = 8.65$, $p < 0.001$, $sr^2 = 0.20$, but not free willB, $b = 0.003$, $\beta = 0.05$, $SE = 0.004$,

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$t(281) = 0.81, p = 0.42, sr^2 = 0.002$, uniquely predicted scores on the SWLS" (2).

- Daily changes in free willB did not predict daily fluctuations of stress and depression better than belief in personal control/choice.
 - **Study 2:** 88 participants from University of Essex, daily free willB slider [0-100], personal control [0-100], daily stress [1-4], daily depression [1-4].
 - "As expected, daily fluctuations in choice/control were significantly associated with daily fluctuations in participants' free willB, $b = 0.51, SE = 0.07$ (95% Wald confidence interval [CI]: 0.38, 0.65; here, free willB was the outcome variable in the analysis)" (5).
 - "Put differently, at the within-person level, daily changes in free willBs did not account for significant variability in daily stress and depression over and above the contributions of daily changes in choice/control" (5).
- "Although we show that the predictive utility of free willB on personal life outcomes is abolished when controlling for personal choice, it remains possible that free willB does have unique predictive utility in other contexts. Indeed, the modest correlation between free willB and personal control suggests that free willB and personal control are not precisely the same thing".
- A survey of high school and college students reports a distinction between free will belief and locus of control. [Rakos, R. F., Laurene, K. R., Skala, S., & Slane, S. \(2008\)](#)
 - Participants: 76 adolescents in 9th-10th grade courses at a Cleveland public high school and 85 college students in psychology courses at Cleveland State University.
 - Procedure: Social and Personal Attitudes Questionnaire was distributed to all students during a regular class session and they were blinded to the true intent of this questionnaire. College students were offered extra credit for their participation.
 - "Senior high school students did not associate beliefs in free will, general will, or personal will with locus of control. College students, on the other hand, produced a significant negative correlation between belief in free will and locus of control, $r = -.22 (81), p < .048$. Similarly, belief in personal will was also negatively correlated with locus of

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control, $r = -0.33$ (82), $p < .002$. These data support our hypothesis that the belief in free will is not identical to an internal locus of control” (28-29).

- Belief in free will has a real world impact on job performance beyond protestant work ethic, life satisfaction, or overall energy levels.
 - [Stillman, T. F., Baumeister, R. F., Vohs, K. D., Lambert, N. M., Fincham, F. D., & Brewer, L. E. \(2010\)](#)
 - Free will belief was a strong and independent predictor of *expected* job performance. Free will belief accounted for variance beyond the variance accounted for by locus of control.
 - **Study 1:** 143 undergraduate participants completed Free Will subscale of Free Will and Determinism Scale (discussed later), the Ten-Item Personality Inventory [1-7], and internality dimension of the Locus of Control Scale [1-7].
 - Participants also reported SAT scores and completed an “expected career performance” report [1-7].
 - Belief in free will associated with perception of future job performance ($r = 0.33$), as did conscientiousness ($r = .43$)
 - The only significant predictor of overall job performance was belief in free will, when compared to life satisfaction, work ethic, and personal energy.
 - **Study 2:** 65 day laborer participants completed Free Will and Determinism Scale, the Vitality Scale, Protestant Ethic Scale (for protestant work ethic), and Satisfaction with Life Scale
 - Workplace supervisors rated participants [1-7] on work effort, reliability, consistency, positive social impact, and a general assessment.
 - Belief in Free will was positively associated with job performance rated by supervisors (0.3, $p = .014$). Protestant work ethic did not significantly correlate to job performance.

Table 2. Correlations, Means, and Standard Deviations Among Independent and Dependent Variables for Study 2

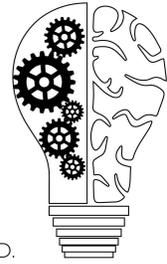
	Free Will Belief	Life Satisfaction	Protestant Work Ethic	Work Vitality	Work Effort ^a	Reliability ^a	Consistency ^a	Social Impact ^a	General ^a	Overall ^a
M	79.75	21.00	48.00	31.73	5.62	5.31	5.00	5.65	5.09	26.66
SD	13.97	6.75	11.20	8.03	1.61	1.56	1.89	1.40	1.89	7.80
Free will belief		.32*	.17	.05	.33**	.18	.27*	.35**	.30*	.30*
Life satisfaction			.18	.26	-.08	.07	.04	.00	.08	.03
Protestant ethic				.70**	-.03	.05	.05	.19	.02	.06
Vitality					-.11	-.07	-.01	.06	-.07	-.05
Work effort ^a						.75**	.81**	.78**	.88**	.90**
Reliability ^a							.93**	.78**	.90**	.94**
Consistency ^a								.78**	.94**	.96**
Personality ^a									.82**	.88**
General ^a										.98**

Note: Free will belief measured by full Paulhus and Margesson (1994) Free Will and Determinism Scale.

^a Measure of job performance.

* $p < .05$ ** $p < .01$

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- Since we have supported the idea that belief in free will is distinct from other similar beliefs, it is possible to review the more prominent public voices in the controversy surrounding free will. We will discuss some of the work created by Sam Harris and James Miles as well as review the implications of early neuroimaging studies.
- **Sam Harris** is a public figure in neuroscience whose work on free will is read by a broad audience. He holds a degree in philosophy from Stanford and a Ph.D. in neuroscience from UCLA. We will primarily discuss his book *Free Will*, published in 2012.

While philosophical rebuttals to his work do exist, we will limit our own responses in this article.

Harris promotes an all-encompassing definition of free will. Here are a few quotes from him:

"The popular conception of free will seems to rest on two assumptions: (1) that each of us could have behaved differently than we did in the past, and (2) that we are the conscious source of most of our thoughts and actions in the present" (27).

*"Consider what it would take to actually have free will. You would need to be aware of all the factors that determine your thoughts and actions, **and you would need to have complete control over those factors.** But there is a paradox here that vitiates the very notion of freedom—for what would influence the influences? More influences? None of these adventitious mental states are the real you. You are not controlling the storm, and you are not lost in it. You are the storm" (37).*

Our response: Harris relies on an implausible definition of free will which requires awareness and complete control of all influential factors in an individual's life. This definition supports his argument because it is unrealistic. It also weakens his argument, because it would not be accepted by most reasonable proponent of free will. He is constructing a straw man.

Of course we have a multiplicity of things that influence us, like our genes, epigenetics, environment, early attachments, ect. In my [suicide lecture](#), I mention these two facts:

- If a monozygotic twin committed suicide, in the largest study, there was only an absolute increase in 4% compared to dizygotic twins.
- If you had 4x the risk of committing suicide due to environmental factors, it would still be 40 per 100,000 people years.

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You can see that even with suicidal genes and early horrible environmental factors, one is not determined to commit suicide, although the risk would be higher.

Harris makes sweeping philosophical claims with limited support, as seen in these quotes:

"Today, the only philosophically respectable way to endorse free will is to be a compatibilist—because we know that determinism, in every sense relevant to human behavior, is true. Unconscious neural events determine our thoughts and actions—and are themselves determined by prior causes of which we are subjectively unaware" (39).

Our response: Harris uses an underlying assumption that determinism and neuroessentialism are the unquestioned truths of psychology which then logically lead to the impossibility of free will. Neuroessentialism is not undisputed and will be discussed later in this presentation.

Also, as I mentioned earlier, I want to point out the language use of “we know” or “science shows” or “it is a fact that,” are often used to support an argument, whether it’s scientific fact or not.

This style of argumentation can be seen as [Bulverism](#), which first points out that the other person is wrong, and you then educate them on the truth. Such as, “You only believe that because you are female, and as a male I will educate you...” or “You only believe in free will because you are not a neuroscientist PhD, and I will now educate you on what we know to be true.”

Harris seems to make philosophical claims based on limited self-reflection, as seen in these quotes:

"And even if there weren't—even if all mental states were truly coincident with their underlying brain states—I cannot decide what I will next think or intend until a thought or intention arises. What will my next mental state be? I do not know—it just happens. Where is the freedom in that?" (32)

"So consciousness, in this sense, is not inconsequential. And yet the entire process of becoming aware of the pain in my back, thinking about it, and seeking a remedy for it results from processes of which I am completely unaware. Did I, the conscious person, create my pain? No. It simply appeared. Did I create the thoughts about it that led me to consider physical therapy? No. They, too, simply appeared. This process of conscious deliberation, while different from unconscious reflex, offers no foundation for freedom of will" (58-59).

"However, when I look for the psychological cause of my behavior, I find it utterly mysterious. Why did I stop training 20 years ago? Well, certain things just became more important to me. But why did they become more important to me—and why precisely then and to that degree? And why did my interest in

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*martial arts suddenly reemerge after decades of hibernation? I can consciously weigh the effects of certain influences—for instance, I recently read Rory Miller’s excellent book *Meditations on Violence*. But why did I read this book? I have no idea. And why did I find it compelling?” (70)*



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Our response: Harris also finds significance in his inability to predict his next mental state or conscious thought. While it is impossible to biochemically or mechanistically be aware of one’s own brain, it is not impossible to understand the origin of many conscious thoughts. Sure, we could all learn more about how we make decisions. We’ve all made decisions while we were influenced by outside sources, and we aren’t able to see those sources until later on. But I don’t think this proves or disproves free will. No one can *prove* that we only make our decisions based on certain inputs. If the scenario can’t be tested 100% of the time with the same result, it can’t be claimed as a scientific conclusion.

Harris rejects more moderate definitions of free will, as seen in these quotes:

"You have not built your mind. And in moments in which you seem to build it—when you make an effort to change yourself, to acquire knowledge, or to perfect a skill—the only tools at your disposal are those that you have inherited from moments past" (65).

"There is no question that human beings can imagine and plan for the future, weigh competing desires, etc.—and that losing these capacities would greatly diminish us. External and internal pressures of various kinds can be present or absent while a person imagines, plans, and acts—and such pressures determine our sense of whether he is morally responsible for his behavior. However, these phenomena have nothing to do with free will" (69).

Our response: Harris’ definition of free will relies on conscious creation of our thoughts, when conscious manipulation is a more reasonable and widely accepted definition. To us, it feels like he’s more or less giving a description on how learning works, and we aren’t sure how that directly applies to free will.

Harris is a neuroscientist with a PhD, and here are the neuroscience arguments/studies he uses to back his claims:

Harris uses the sequence of events in a neuroimaging study to argue against free will in the following quote:

"One fact now seems indisputable: Some moments before you are aware of what you will do next—a time in which you subjectively appear to have complete freedom to behave however you please—your

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brain has already determined what you will do. You then become conscious of this “decision” and believe that you are in the process of making it” (31).

Our response: Harris relies heavily on a 1983 study by Benjamin Libet which demonstrated neural activity before a conscious decision to move. Though Libet’s work spans multiple decades, we will focus on the 1983 article cited by Harris and a handful of other articles published in the 1980s.

Adina L. Roskies ([2011](#)) provides a helpful summary of these articles.

- *“In cases in which subjects are asked to spontaneously will a basic action (movement of the wrist or finger), an evoked potential measured at the scalp surface (the readiness potential, or RP) precedes the movement by approximately 500-600 milliseconds (Libet, Wright Jr., and Gleason 1982). This is what Libet calls the type II RP. In cases in which such action is preplanned, the RP (a type I RP) is seen even earlier, about 1000 milliseconds before the motor activity (Libet, Wright Jr., and Gleason 1982).”*
- *“When subjects are asked to report the time of their conscious intention to act (W) by indexing it to a moving spot on a clock face, the time of intention (W) typically precedes the movement by approximately 200 milliseconds (Libet et al. 1983; Libet 1985).”*

These two summaries imply that a conscious will does not initiate action but *follows* this initiation. Roskies points out that the link between RP and motor activity cannot be assumed. It is also possible that RP is related to the formation of a conscious will. An additional consideration of the testing methods is also warranted since RP data is only collected if a motor activity occurs. If an RP does occur without motor activity, the causal claim between RP and movement would be challenged. Unfortunately, such potential data was excluded by the study design.

Philosophically, Libet’s work seems to encapsulate free will in its simplest form. However, it is not a meaningful definition of freedom that would require “acting for reasons.” Instead, Libet’s participants were simply deciding when to act and were not faced with reasons or motivations other than following research instructions.

Another recent publication also questions Libet’s methodology ([Shields, G. S. \(2014\)](#))

Using a modified version of Libet’s approach, researchers played tones and asked participants to classify each tone as high or low. The experimental group used the Libet clock and were asked to note the hand position when they classified the tone. The control group did not have a clock present.

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The same study also included an unmodified Libet approach with finger movement and a clock. However, the clock was removed in the control group.

These experiments support the idea that RP values before a decision are artifacts from paying attention to the clock.

“Data commonly purported to show that the apparent ability of consciousness to cause behavior is nothing more than an illusion, while compelling at first, suffer from methodological limitations/weaknesses that preclude strong conclusions. The notion that conscious causation is an illusion cannot be ruled out; however, it is not a conclusion to which the data command assent.”

Researchers have successfully replicated Libet’s results with intracranial recordings ([Maoz, U., Ye, S., Ross, I., Mamelak, A., & Koch, C. \(2012\)](#))

- **Participants:** Researchers worked with 8 epileptic patients who received intracranial electrodes for clinical indications
- **Methods:** Participants were rewarded or penalized \$0.10 during a game involving a button for each hand. They won if they raised a different hand from their opponent and were penalized for choosing the same hand or raising a hand before the end of a countdown timer.
 - Using a predictive algorithm and the appropriate equipment for translating inputs from the intracranial electrodes, the researcher was given a predictive tone in their right or left ear.
- **Results:** “We tested our prediction system in actual real time on 2 patients—P15CS and P19CS (a depth and grid patient, respectively), with a prediction time of 0.5 s before the go signal”
 - “For P15CS, we achieved an accuracy of 72±2% (±standard error; accuracy = number of accurately predicted trials / [total number of trials - number of dropped trials]; p = 10⁻⁸, binomial test)”
 - With modifications to the algorithm, researchers “ could achieve accuracies of 81±5% and 90±3% (±standard error) for P15CS and P19CS, respectively”
 - “Importantly, our subjects played a matching pennies game—a 2-choice version of rock-paper-scissors [15]—to keep their task realistic, with minor though real consequences, unlike the Libet-type paradigms whose outcome bears no consequences for the subjects”
 - However, the same researchers completed an additional study which found the readiness potentials present in arbitrary decisions were not present in deliberative decisions. ([Maoz, U., Yaffe, G., Koch, C., & Mudrik, L. \(2019\)](#))
 - **Purpose:** The distinction between arbitrary decisions (such as those in Libet’s 1983 article) and deliberative decisions is significant since most definitions of free will focus on meaningful decisions which are not represented by the articles Sam Harris cites.

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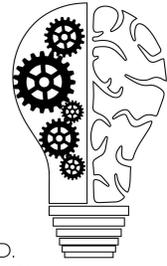


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- **Methods:** The experiment used an EEG to monitor participant decisions to donate money to non-profit organizations (NPOs). In arbitrary decisions, both NPOs received an equal donation of \$500 regardless of participant input, while in deliberate decisions the participants chose which NPO should receive the full \$1000.
 - Based on previous rating sessions, the researchers were able to create “easy” and “hard” choices based on how similar both NPOs were to the participant’s preferences.
- **Results:** “As expected, subjects were substantially slower for deliberate (M = 2.33, SD = 0.51) than for arbitrary (M = 0.99, SD = 0.32) decisions”
- “Importantly, **subjects were significantly slower for hard (M = 2.52, SD = 0.62) vs. easy (M = 2.13, SD = 0.44) decisions in the deliberate case** (t(17)=4.78, p=0.0002), **yet not for the arbitrary case** (M = 1.00, SD = 0.34; M = 0.98, SD = 0.32, for hard and easy arbitrary decisions, respectively; t(17)=1.01, p=0.33; F(1,17)=20.85, p<0.0005 for the interaction between decision type and decision difficulty).”
- “Focusing on the last 500 ms before movement onset for our statistical tests, we found a clear RP in arbitrary decisions, **yet RP amplitude was not significantly different from 0 in deliberate decisions**”
- After **controlling for the difference in reaction times, researchers found, “Deliberate and arbitrary decisions were still reliably different** (F(1,17)=5.22, p=0.03), with significant RPs found in arbitrary (easy: t(8)=4.57, p=0.0018; hard: t(8)=4.09, p=0.0035), but not deliberate (easy: t(8)=1.92, p=0.09; hard: t(8)=0.63, p=0.54) decisions
- The 1983 article has been reinterpreted by multiple publications. One claims that **“the urge to act in this experiment occurs when normal random fluctuations in motor activity happen to cross a threshold, but that the earlier build-up neither reflects an unconscious intention nor a commitment to act”** ([Schurger et al. 2012](#)). Other reinterpretation uses the concept of “forward models” which claims “that a representation of the motor command . . . is used to predict the sensory consequences of an action” ([Blakemore et al., 1998](#)).

It’s also important to remember that our way of looking at the brain was not developed for these types of experiments. We also know that complex versus simplistic tasks make the brain light up in different ways.

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Just because you're not aware of all of the different pieces of decisions we make doesn't mean you aren't actually making the decision for yourself.

What, then, is Sam Harris really looking at? We believe he is actually asking questions about the subconscious and the unconscious.

He said:

- *"The brain is a physical system, entirely beholden to the laws of nature—and there is every reason to believe that changes in its functional state and material structure entirely dictate our thoughts and actions. But even if the human mind were made of soul-stuff, nothing about my argument would change. The unconscious operations of a soul would grant you no more freedom than the unconscious physiology of your brain does" (34).*
- *"If you don't know what your soul is going to do next, you are not in control" (35)*

Our response: His definition of free will is distinct from most other definitions. We think he is actually talking about something else—the unconscious. For more information on the unconscious, see Dr. Puder's podcast on [The Unconscious](#).

What Harris does well is a semi-cohesive argument for determinism, but he does not discuss current clock studies and counter arguments. As shown above, not all scientists agree with his conclusions. Psychotherapy can help people move towards what they truly desire and why they're not aware of it. It is reductionistic to take a simple experiment and say science has proven things far beyond what it has shown.

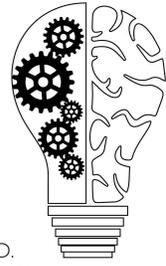
In summary

The concept of free will has broad significance in the history of philosophy, practice of religion, and concept of justice. It also has importance in the current world of pandemics—both physiologic and race-based. The main distinctions in a discussion of free will are between a deterministic universe where all decisions are based on previous events and an indeterministic universe where human decisions are relatively independent. It is possible to modify an individual's belief toward determinism (and a lack of free will) or toward free will and an indeterministic universe.

An increased belief in free will has been associated with a number of benefits such as decreased aggression, less cheating, and decreased racism. However, these benefits only speak to a belief in free will. The existence of free will itself is debated within religious, philosophical, and neuroscience realms. One of the most vocal voices in the neuroscience realm is Sam Harris who questions the existence of free

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will in his similarly titled book. However, the central study he cites in his book has been replicated and reinterpreted by many since its publication in 1983. Harris's claim that determinism is a foregone conclusion is not supported by these later studies, and the debate remains unresolved.



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