

In Defense of Free Will from Neurobiological Challenges

Philosophy

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Abstract

Neuroscience progresses rapidly with the advent of new observational techniques. Scientists have reduced mental states such as emotions and moods to specific chemicals and areas of the brain. Some philosophers have taken these advances to mean the death of free will. So, this paper seeks to counter with philosophical arguments (some traditional, some modern, and some novel) the notion that because aspects of human personalities and choice are influenced and reducible to neurochemistry that free will does not exist. Free will is worth considering afresh because of all of the implications of neuroscience and because discussions can help clarify ideas about how to assign blame and praise, as well as how to punish. We intuit free will and to function it is necessary to believe in it, and therefore it is necessary to justify *why* we believe in it. I then briefly outline it and its history and a collection of related terms. Next, I consider three neurobiologically-based arguments against free will: we are governed by our genes, psychological abnormalities eliminate free will, and lastly that because our emotions are influenced by neurochemistry we do not choose. I answer with pragmatism, choosing reasonable definitions and traditional Humean arguments. Then, I give reasons to actually support free will with appeals to pragmatism and Churchland's neurophilosophy (philosophy influenced and informed by neuroscience). This leads to a rarity in philosophy: actual applications. Through science we can give people suffering from mental illness their free will back in the areas in which they had lost it. Finally, I consider determinism versus libertarianism and I show with Hume's arguments and original examples that a world need not be nondeterministic to have free will. I conclude that compatibilism is the best possible option at the moment in a world where we have free will.

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Why Free Will?

Three witches tell a guy that he will be king of Scotland and then he does so (through betrayal and regicide). An oracle tells another guy that he will murder his father and marry his mother and then he does so. A white woman falsely accuses a black man of rape and he is convicted and executed.

Which of the characters are to blame? Which were the victims of a cruel fate? Our intuition tells us that Macbeth and his wife are if not evil overly ambitious and thus responsible. Oedipus, though less guilty because he did not set the events in motion nor cause such cruel coincidences, retains some blame for his notoriously hot temper and simply stupid and ill-thought decisions. Lastly, anyone can see that Tom Robinson could do nothing against the racist judicial system; in fact, his misfortune results because of his good character. Common sense, whatever that is, indicates a continuum of guilt.

Their situations are entirely equal, at least in terms of to whom we should assign blame, according to those who deny free will a place in the collective ontology. Macbeth is not to blame for killing Duncan because he could not have acted otherwise. No one is to blame for anything, regardless of their intentions. Similarly, we cannot praise people for their actions. The man who rescued the baby from the burning building should not be called a hero; he was just living out his destiny. Denial of free will also obliterates ethics. How can one criticize some choices and advocate others if choices do not exist in the first place?

I came to choose this topic with a few misgivings. My discomfort with the arguments that do away with free will is no guarantee of their falsity. Yet, I feel that I can more ably argue that with which I vehemently disagree than that for which I have no strong feelings. Such discomfort is my impetus, my motivation for working with this topic. I want to be able to praise my mother

for raising me and I want the difficulties she overcame to have some sort of meaning. My sister has long struggled with mental illness and I have long wondered to what degree she is responsible and in control of her actions. Secondly, I feared that free will may be too trite. We all know the stereotypes of philosophers who argue endlessly without progress about free will on the weekends and on the weekdays flip burgers. The volume of current work being done on this very topic at the moment surprised and attracted me, though. Science often clarifies and even answers philosophical questions and now neuroscience offers new avenues for the topic of free will (see Walter's *Neurophilosophy of Free Will*). Where purely rational arguments could for centuries make no headway such novel arguments and evidence are tantalizing. Lastly, my third misgiving was that my research could prove my intuitions untenable and that I would be transformed into something resembling a nihilist, for me a frightening proposition. But I kept coming back to the fact that I really wanted to defend common-sense notions of free will. We cannot operate without the assumption that, even in a deterministic world, we have it. Imagine you're driving on the freeway and a speeding car cuts you off. You can't get angry because they could not have done otherwise. We cannot even blame those who murder family members. Ethics and punishment cannot (rationally) exist. It is important to justify and defend the free will that we intuit every day on rigorous grounds.

Free will has been a contentious topic for quite a long time, as *Oedipus Rex* (428 BCE) shows. Before I examine the context, it would be best to offer a definition. Free will is "a power of acting or of not acting, according to the determination of the will (Hume 1748)." Prior to classical philosophy, people tended to believe that their fates were the result of divine will (the Fates of the Greek pantheon, for example). Later, theologians considered it a religious question as an answer to the problem of evil. The problem of evil states that given an omnipotent,

omniscient, and morally perfect God, evil could not exist (for God would know it exists and have the desire and ability to eliminate it). Because evil clearly exists, there is no omnipotent, omniscient, morally perfect God. However, God would prefer not to restrict the choice of humans because a world with free will and evil is better than a world without evil and choice (Tooley 2004). The Reformation presented the first dissent from the free will orthodoxy with Calvinism. John Calvin formulated a cosmology that denied the existence of free will because of God's control over everything, include all events. (Calvin 1559) As scientific knowledge progressed with Newton's discoveries during the Enlightenment, philosophers began thinking that the regularity of the rules of nature implies determinism, "the idea that every event is necessitated by antecedent events and conditions together with the laws of nature (Hofer 2003)."

Determinism and free will can interact in a few ways. First, one who is a libertarian believes free will is true and determinism is false. Indeed, the apparent truth of free will is used as an argument against the truth of determinism. A second stance was favored by the Baron D'Holbach, called hard determinism. It denies free will based on the so-called inevitability of events that determinism demonstrates. Finally, there is compatibilism (with modern adherents such as Dennett), which accepts determinism and free will as true (McKenna 2004).

As science prompted Enlightenment thinkers to think more deeply about free will, so it prompts me to write this paper. New results provide what seem to be attacks on our conception of free will every day. Discoveries of the specific chemicals that determine our moods; discoveries that we really are not the blank slates at birth that we hoped we were; and discoveries that our biological past is like that of many other animals, not an exalted one. All of this is disconcerting for the rational person who wants and needs to believe in free will. As I have

shown, a world without free will is bleak indeed. So, my aim is to look at how to reconcile the apparent scientific attacks on free will with a philosophical and logical perspective. Does free will survive the attacks? If so, how do we put our free will on a more rigorous basis than intuition?

Free will does survive the encounter and it comes out stronger than before.

Neurobiological attacks on free will amount to little more than saying there is no absolute choice. Well, of course. There are constraints to choice but that does not eliminate the choices that we do have. Even if our genes decide our personalities and inclinations, as Dennett and Dawkins demonstrate (1995 and 1976, respectively), one of the unique abilities of humanity and one of the most astounding of the repercussions of consciousness is that we can defy our genetic directives. After establishing that free will is not harmed at all by constraints, I will establish *why* free will should be supported. I will invoke pragmatism and neurobiology itself. Then I will attack the notion that determinism implies inevitability implies a lack of free will. Libertarianism is a fool's paradise because a nondeterministic universe does not facilitate free will.

Compatibilism is the only philosophy able to reconcile scientific implications and the common sense notion of free will. All of these challenges enhance free will because they force it to be more than simply wishful thinking. To quote a philosopher whose works revolved entirely around "will," "What does not kill me, makes me stronger (Nietzsche 1888)."

Neurobiological Attacks on Free Will and Responses

While the psychological idiosyncrasies, chemicals in the brain, and the genetic code certainly influence choice, there are three different responses to the conclusion that humans do not have actual choice.

Firstly, constraints to choice do not eliminate the choice within those constraints. A multitude of examples illustrate this point. For instance, though I would like to grow wings and fly, I cannot. When locked in a jail cell, I cannot meet a friend for coffee. These examples show a necessity for a revision of the definition of free will. A good definition could be “the ability of one to choose between a set of x physically possible choices.” As the examples showed, it is a much more reasonable definition of free will. And with this definition, the mentally afflicted who cannot choose to be, for example, not paranoid, still have free will *in certain ways*. Though we do indeed have arbitrary psychological idiosyncrasies, this definition allows us to retain our free will in spite of our inability to control them for those issues. But the paranoid cannot choose to not be paranoid, and so his decisions are constrained by false beliefs and desires. Does that affect his actual free will in matters other than his brain chemistry? Churchland makes the point that however strong our desires, we can still choose contrary to them (2002). The paranoid can believe that the world’s out to get him and can lash out and attack everyone, but he can also ignore the desire to attack and the desire to believe irrationally. So, he has free will but his choices are heavily influenced (though *not* decided for him). Notably, fitting with our definition, a Tourette’s Syndrome sufferer does not have free will regarding certain movements. Not simply influenced, his actions are determined unconsciously. While the paranoid still has free will, surely it is not right to assign the same amount of blame to someone who has such strong, uncontrollable desires to do harm and someone who does harm without those strong desires even

though they both possess free will. Thus, the problem of free will allows us only to consider how to assign blame and it does not entail how. In summary: because free will means only the ability to do what is physically possible, a Tourette's sufferer does not have free will with respect to his tics and a person with a chemical disposition to paranoia does not have free will with respect to certain desires. However, the person with paranoia can still choose how to act, though how to assign blame for his actions must be reconciled with his uncontrollable desires. Free will is a necessary but not sufficient cause for culpability. I will return to this discussion later when I give reasons to actually support free will.

The second argument against free will states that our genes decide for us by giving us our predispositions (Pinker 2002 raises the problem). The response to this argument draws heavily on Dawkins 1976 and Dennett 1995. In Dawkins's *The Selfish Gene*, he states that humans are unique among organisms in that they have the ability to deny their genetic directives. For example, consider the salmon. After reproducing and giving birth, the genes have no need for the salmon and so it dies. Humans, on the other hand, constantly deny their genetic instructions. Gandhi's hunger strikes serve as an illustrative example, as do suicides. Genes live to replicate, so to speak. No matter how elaborate, the genetic code essentially limits itself to instructions for survival and reproduction (or, more accurately, survival *for* reproduction). By ending our own lives, by ending our genes' lives, we prove that we are not slaves to our genes. Another striking and common example is the celibate priest who ignores his "baser" impulses to reproduce. Because of our consciousness we do not simply obey our instincts. This leads to a new definition of free will for consideration: free will is the ability not only to the set of all physically possible x , but also to deny the directives of the genetic code. Thus humanity can retain its egotistical spot in the sun, distinguishing it from all the other animals.

The last neurobiological attack on free will states that because our moods are influenced by the chemical make-up of our brains, we do not make the choices. Implicit in the premises is that there is a sort of Cartesian you that is separate from the chemical you. I do not find the arguments in favor of such dualism particularly convincing. At the very least, monism versus dualism is still an open question, though I am swayed toward a physicalist monism (physicalism being “that everything supervenes on the physical” (Stoljar 2001)). Until such a Cartesian entity as the soul can be shown to exist, or until convincing arguments materialize for it, I will consider this objection to free will fallacious. There is another response that has been historically strong. Emotions are not, as Kant suggested, opposed to reason. Will is not freer on a sliding scale with pure reason at the apex and pure emotion at the nadir. Our choices cannot exist without our emotions. Reason can tell us *how* to accomplish something, but only emotion creates the *why* (Hume 1748). Logical analysis can (eventually) tell me best how to distribute wealth among the poor given a desired outcome, but only emotions such as good will can explain why I do it at all. The caveat that our emotions are chemical is a red herring. If they are, so what? They are still our emotions. They still supply us with our goals, motivations, and desires. Only when they are distinctly abnormal does this change somewhat, as discussed in the section below.

Direct challenges dealt with, I now move on to concrete reasons for actually believing in free will.

Pragmatism and Neurophilosophy Prop up Free Will

Many arguments in favor of free will exist. The simplest to outline are various forms of pragmatism as I will illustrate here. Formulated most notably by William James, it essentially states that the effects of a proposition ultimately reveal its epistemological truth (Putnam 1994). As I demonstrated earlier, a world without free will will have no basis by which to punish or praise. Humanity very much values both of these actions. A world in which a murderer cannot be punished and restrained is very dangerous and will definitely increase collective harm. Similarly, a world without praise seems additionally hollow. In addition, it is psychologically harmful to believe that one does not choose consciously to act. If events merely happened to people widespread apathy would evolve. Again, Dennett has a unique insight, this time in his *The Intentional Stance* (1989). According to him, it is useful to assign consciousness and free will to others because it would be extremely difficult or at least resource-consuming to make sense of the actions of others in any alternative way. Finally, a last pragmatic benefit to free will is the necessity of the assumption of its truth for the brain to learn. The brain needs to have caused events so that given the outcomes it knows how to adjust future responses (Churchland 2002). If my brain sends a signal to, for example, punch a large football player, then when I get beaten up my brain will not learn to not send exactly that signal again unless it is aware that its first signal was the cause of my being beaten up. So, the pragmatic benefits for supporting free will are obvious.

Now that I have shown that neuroscience's attacks on free will are hollow, I will show how neuroscience actually supports free will. P.S. Churchland in *Brain-Wise* indicates a way to determine when x is physically possible and thus when an individual's will is free. She introduces the notion of a parameter space, where certain conditions such as hormone and other

neurochemical levels influence choice, possibly in such a great degree as to be irresistible (like for those who have Tourette's) (Churchland 2002). So neuroscience can answer the hard question that our definition raises of when x is physically possible (and you can also extrapolate to levels of blame and fault). Someone deprived of serotonin may exhibit depression and is therefore not culpable for some responses and does not have normal free will. Even more interesting, not only does neuroscience tell us when x is physically possible but it also gives us ways to make x physically possible, to impart free will to people who do not have it. That same person can, with e.g. serotonin, obtain the free will granted to those without brain abnormalities. Previously thought to be some metaphysical essence (what makes humans humans!), science can grant free will. I find that incredible.

Compatibilism is Superior to Libertarianism and Hard Determinism

Determinism and free will have seemed irreconcilable for quite a long time. It is unfortunate because truly there is no conflict. To illustrate this, consider a nondeterministic universe. Libertarians would say that this is where free will actually thrives. However, examining it more closely reveals that this is simply not the case. The opposite of a deterministic, or caused, universe is a nondeterministic, or uncaused, universe. A synonym for uncaused is random. As Hume demonstrated, randomness does not facilitate free will. One has no control over random events by definition, and therefore one cannot exercise free will in a random universe whatsoever because one's choices have no effects. In a caused, deterministic universe when I choose to throw a ball the ball is truly thrown. My decision had an actual, measurable outcome in the universe. Simply because it was predictable given perfect knowledge (which, again, is extremely unpragmatic) does not mean that I did not make the decision. Imagine the same situation in the uncaused nondeterministic world. I choose to throw the ball. Instead, a giraffe pops out of my hand. My choice had no effect. I could have chosen to not throw the ball and the subsequent event would have the same relevance to my decision as the first decision. Looking at it another way, one wonders why someone in a nondeterministic world would choose anything – not choosing would have just as great an effect as choosing.

The comparison between a deterministic (caused) and a nondeterministic (uncaused) universe demonstrates the key misunderstanding in the conflict between free will and determinism. As Dennett demonstrates, free will is not the ability to be free from causality. Rather, it is simply the ability to make decisions without duress. The worthlessness of using the inevitability argument against compatibilism becomes apparent when one looks at what the word means: unavoidable. Clearly even in a deterministic universe things can be avoided (2003). I can

avoid a lunging dog, for example. Truly, this problem requires only a simple response because it is such an obvious error. A deterministic universe is the only universe in which free will *could* exist (as mentioned previously, without causation choice and therefore free will cannot be exercised). Similarly, caused does not mean predictable (they are often used interchangeably, most notoriously with Laplace's demon, an entity that the physicist Laplace said could predict with perfect accuracy the future states of the world given a perfect set of conditions and the laws of classical mechanics.). It is extremely difficult to predict behavior because the number of conditions that must be known are staggering, and due to the fact that the brain is a chaotic system following the effects and changes of that staggering amount of conditions is practically impossible. Pragmatically, then, it is best to conclude that even though events are caused, they cannot be predicted. Given that logic, libertarianism is untenable.

Hard determinism fares little better and assorted other philosophies fail as well. Attacks on free will have been ineffective and the support for free will remains valid. Hard determinists fall into the same trap as libertarians, believing that compatibilism is untenable because of a misunderstanding about the relationship between causality and free will. It is also completely unpragmatic. Calvinism, the disbelief in free will because of the absolute control over events of God could be true but there is not enough evidence or logical justification for it. Compatibilism is so far the only viable option given the current evidence and reasoning available.

Conclusion

Free will survived this exchange quite well indeed. I have shown the ineffectiveness of the neurobiological and deterministic attacks. The skirmishes have invigorated the concept of free will by a large measure. Originally vague definitions sufficed, but now better definitions exist. The definition I now support reads as: the ability to do everything that is physically possible as well as to deny the impulses of our genes. I have also shown that, contrary to the claims of hard determinists and libertarians alike, determinism is a necessary condition for the existence of free will. This is because without determinism, or consistent causality, there is no way for a person to exercise a choice that has an impact on the world consistently. There is absolutely no conflict between free will and determinism simply because things are predictable. Finally, I have given reasons not only to disbelieve in the attacks on free will but to actually support the concept of free will, as well. Pragmatism dictates that the fruitfulness of free will's benefits indicates that we should accept its truth. Without a concept of free will, praise and punishment could not exist and apathy would be a permanent state of affairs. I have also shown how neuroscience helps define the definition of free will (how to define which x are physically possible) and actually useful applications, giving those who suffer mental abnormalities free will by way of certain chemicals.

A few questions certainly remain, however. Some questions appear unanswerable, like the propositions of Calvinism. Others appear answerable, but fundamental and daunting. While I have demonstrated that compatibilism is definitely possible (not contradictory at all) and I have demonstrated pragmatic and empirical reasons for believing in free will, there really is no concrete evidence that the world *is* deterministic (in which all events are caused and with no true randomness). Certainly it is not a logical necessity. Indeed, quantum mechanics raises a few

doubts as to whether at a micro level the universe is deterministic and whether that can transfer to the macro world. It would be interesting to see if there was a way to conclusively determine what if any nondeterministic effects there are, and to what extent they must affect our world to seriously impair our free will (certainly, for instance, if our brains behave nondeterministically as some such as Penrose argue then we are not in control necessarily of our choices).

There is of course always the “so what?” that comes with any philosophical discussion. What is the relevance, why should anyone and specifically I care? Firstly, as I mentioned in the conclusion already there is the fact that free will can practically given with chemicals. To the people who had lost or never had it, this is extremely important. Discussions of free will also clarify the role of blame and praise, and therefore punishment and reward. If we can figure out the amount of choice an individual had regarding a certain action, to what degree the action was a physically possible x given the parameter space of his brain, we can figure out a degree of culpability and a punishment. We can separate ambitious Macbeth from rash Oedipus from poor Tom Robinson and act accordingly. Thus, judgments and sentences can be more humane and more fitting with personal capabilities. On a more personal note, I can now understand my sister and deal with her and her condition more appropriately. I can thank my mother as much as my heart tells me I should (she was free not to raise me). Much of philosophy can turn out to be simply finding rational reasons to believe in what we readily accept every day. While that is often a noble and worthwhile goal, I hope that my discussion was more than simply a justification of preconceptions.

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