Pulled Up Short with Stanton Wortham

Does neuroscience indicate that humans have no free will?

Featuring Greg Fried with Stanton Wortham (host) and Liane Young (commentator)

Original Air Date: May 17, 2021

Stanton Wortham 0:08
Welcome to another episode of Pulled Up Short. Thanks for being with us. Today we have with us, Greg Fried, a professor of philosophy at Boston College, and as a discussant, we have Liane Young, a professor of psychology, also at Boston College. We're grateful to them for joining us today. Greg, I understand that you would like to disturb us a bit by arguing about how we don't really have free will the way most of us think we do. Could you tell us a bit more about that?

Greg Fried 2:03
Well, thank you, Stanton. I would start by saying that recent experiments in neuroscience have provided startling evidence that the ancient question of whether human beings have free will might be resolved by a fuller understanding of how the human brain functions with respect to action. Beginning in the 1980s, the research of Benjamin Libet and others in the field of cognitive neuroscience has seemed to indicate that the body and brain or perhaps more accurately, the brain-body as a continuous whole, makes its decisions to act before the conscious mind represents to itself such actions as freely chosen. More specifically, what such experiments show is that the impulses conveyed from brain to nerve to muscle to action precede by nanoseconds the self aware mind's perception of itself making the decision to act. That would seem to mean that a person's apparently free decision to type letters on a keyboard or lift a mug of coffee or pull the trigger of a gun has, in fact, already been made by the nexus of brain body interactions before what the mind flatters itself to call its free will chooses to do these things. For such neuroscience, then, the concept of the free will, is non-scientific. The free will is an illusion cast up by the mind, but which the mind convinces itself it has performed.

So the philosophical question of free will is indeed ancient, reaching back to the divisions between the materialists and the thinkers of many other stripes who believed in human freedom. Democritus, who lived around the same time as Socrates, for example, held that everything in the universe is composed of atoms in space, combining and re-combining in various ways to produce what we perceive as tables, dogs, mountains, or even what we call the soul. Our consciousness then, is only an epiphenomenon, a surface experience of a deeper reality, namely, that all that exists is a function of matter in motion, as ruled by natural laws. Those natural laws

obey an unbreakable chain of cause and effect. And so while what we in our naivete experience as choices made from free will, the fuller understanding of nature tells us that those things are in fact the results of an unbroken sequence of cause and effect, beyond the control of our petty free-riding consciousness. As all matter is determined in its motion by the iron laws of nature, so too is human choice. This is the core idea of determinism, a philosophical response to the question of free will that predates modern science, but which some researchers in contemporary neuroscience claim to confirm as the only empirical account of human action.

Stanton Wortham 5:37
Well, that certainly pulls me up short. So you're saying that we are under some illusion that we're making conscious decisions and having the freedom to decide what we want to do. But in fact, our brains and bodies are making those choices for us, and we're just imagining that we have control over it. It's a startling and disturbing idea. What's particularly interesting about your take on it is that you seem to be claiming that science has an insight into this that's just recently been developed, so it's not a matter of philosophical argument anymore. It's a matter of, "Now we see what actually happens in the natural systems." Can you say a bit more about that idea?

Greg Fried 6:22
Well, I think what some philosophers would say is that as students of nature, we must assume that the human being is like any other natural being -- that it's functioning follows the various laws or patterns of nature in the body's biology, chemistry, and ultimately, physics. Studying human behavior, then, is complicated by the fact that we ourselves are the objects we are studying. So privately, inwardly, and subjectively, I might think, feel, and believe that by an act of freewill, I decide to move my arm or sign a document or say, "I do" at my wedding. But if we step back from ourselves, and consider human behavior as we would any other form of motion or action in the natural material world, why should we assume that human activity would require an explanatory device, namely the free will, not required for any other natural phenomena? So studied objectively, it would be surprising indeed, if we needed some exception to the general rule that natural phenomena require natural, observable, and empirically verifiable explanations, and nothing more.

Furthermore, neuroscience has made extraordinary progress in making sense of the subjective mind in terms of the objective biological, chemical, and electrical functioning of the physical brain. Obviously, human beings like other living beings, do not behave in ways that can be immediately predicted by natural laws, in a way such as physics would predict the motion of one billiard ball hitting another, or chemistry would predict the production of water molecules by the meeting of hydrogen and oxygen molecules. Human beings, like other animals do seem to choose to do this rather than that, and so they seem to be the cause of their own motions.

Neuroscience, however, takes as its starting assumption that human motion -- what we would call behavior, and especially behavior governed by free will -- that those motions may be explained purely on the basis of natural phenomena that can, in principle, be broken down to even more primary elements of nature. The body moves and functions through extraordinarily complex networks of the nervous system, which sends sensory input from the body to the brain, and in turn, which sends chemical and electrical impulses from the brain to the organs,

sinews, and muscles, and that all results in processes and movements of the body. Some of this activity is mostly unconscious and unperceived, like the digestion of food in the gut, and some of that activity is conscious and vivid, like cutting a wedding cake, but why should we think that what we perceive as conscious decisions of the free will are really any different from the myriad other functions of the body?

Experiments in neuro psychology have attempted to clarify the relationship between the brain and apparently voluntary action by focusing on brain activity when performing a simple task, such as choosing when to raise one's arm. What such studies claimed to show is that the brain's neural signal commanding the arm to move, in fact, takes place in some cases, as much as seven seconds before the conscious mind perceives itself to have made the choice to move. The experience of the Free Will as making this choice is therefore more like a postal clerk, stamping a postmark on the letter after you have posted it: the subjective impression of freely choosing to act is an after-effect, or a confirmation of something that has already happened. The brain has already decided to act before the mind is ready to flatter itself that it has made a free choice.

Stanton Wortham 11:28
This is certainly a provocative idea. Unsurprisingly, I find myself resisting the notion that free will is simply an illusion. I imagine that I'm not my brain. I'm sure my brain is doing various things, but I have this idea that what's going on with me is different than what's going on in the brain, or there are some things that are going on with me that I do have control over. I'm willing to grant you that some of the stuff that I'm doing can be seen as just biological processes of various kinds, but I have this very strong desire to say that there are some things that are a matter of free will that I have control over. Do you think that's wrong?

Greg Fried 12:08
Well, I certainly understand your resistance in some ways. It simply feels unimaginable to give up on the notion of free will and choice. So like you, there have been many others who have tried to resist full determinism through the use of various categories. For example, early Christian figures like St. Augustine attempted to reconcile God's providence is all-knowing and extra-temporal awareness as the prime mover of the universe, of how all things will unfold in time, with the responsibility on the other hand of human beings for their own sin. The answer offered by Augustine and others is that while God has set the world in motion, and thus knows all that will happen, including what we each will choose to do. That does not mean that we do not also freely choose to do it.

A more secular example of this rationale is most famously defended by Emmanuel Kant, who argues that the world has two aspects. One is the world understood as phenomenon, as elements of a natural world ruled by its laws of cause and effect. The human being is indeed determined as atoms colliding in space in this natural world. But he also thinks that we should understand the world as noumenon, as a being defined by reason and freedom. When we are understood this way, as human beings, we can indeed be the originators of freely chosen streams of events, which are themselves then subject to the laws of nature and of freedom. We cannot know with certainty, Kant would say in each case, whether we have acted in freedom, or as determined by some chain of pre

determining causes, but the very possibility of our freedom as a source of agency is enough to make us ethically responsible for what we do.

Despite these strong attempts to challenge the notion of determinism and the lack of free will, some in cognitive neuroscience would claim that they have resolved this debate once and for all. If the scientific evidence shows that in every case where we seem to be acting by reason or freedom, the decision in fact, already has been made by the brain-body, then Kant's double world collapses into one world: the world of physical determinism. Kant's claim for freedom depends on the assumption that it is, at least sometimes, possible that free will or free choice initiate a causal sequence. But if the evidence shows that in every case of choosing, the decision has, in fact, already been made by the brain-body, rather than by the conscious mind, then the argument is finally over. The free will has been exposed as just another metaphysical self delusion of the self aggrandizing human mind, a mind that vainly wants to claim for itself some small portion of the power of God as Prime Mover.

Stanton Wortham 16:02
It is a compelling case that you're making and a disturbing one. I think I'm gonna get even more disturbed when we start talking about the implications that this has. Many of our institutions and our commonsense ways of acting are based on the notion of free will. We hold people responsible, and we try to engage with them when we hope to change their behavior. And that all depends on these assumptions, which you're saying science has now disproven. So can you talk to me a little bit more about that?

Greg Fried 16:33
Certainly. So if true, if freedom of the will turns out to be an illusion finally dispelled by empirical neurosciences, the consequences of these findings would indeed be far-reaching, interdisciplinary, and in fact, potentially revolutionary for society. Take crime and punishment, for example. The presuppositions of Western systems of law can be traced back at least as far back as Aristotle who argued in the Nicomachean Ethics, that people deserve praise and blame for what they do, only to the extent that they can voluntarily choose to act. Aristotle recognized that human beings might be forced into involuntary actions by natural forces beyond their control or by mental illnesses, but he insisted that it would be impossible to understand life on the human scale, as it were, without attributing to human beings some capacity for free choice. He described this as remaining faithful to the lived phenomena of human existence, that we simply cannot but attribute some degree of freedom to what we do, in most circumstances, because otherwise we could not hold ourselves and others accountable for their good deeds and their bad. This is the basis for evaluating both personal, ethical conduct and for establishing a rational system of legal punishment. Without the capacity to choose to violate what a just society has promulgated as law, it would make no sense to punish an individual as responsible for their infractions.

But if neuroscience has conclusively demonstrated, that the free will is an illusion, that has profound implications for praise and blame on the interpersonal level and for legal and penal systems in society,

Stanton Wortham 18:47
That certainly seems like an important implication. As you say, legal systems act as if we have the right to punish people because we think they act deliberately in some cases and have control over their actions. But if there is no free will, if it's an illusion, does that mean we aren't justified in holding people responsible for their actions?

Greg Fried 19:09
That's a very good question. If human beings may never properly be understood as responsible for their deeds, because no one is ever truly the source of freely chosen action, there are many implications for the legal system. Presumably, it would not mean that there would no longer be acts that would be considered undesirable, but it would mean that no one could be blamed for them. So what should society do about such acts and the individuals who do them? They cannot be punished, because punishment assumes responsibility. But if human beings are ultimately no different from other matter in space, then what should the most logical response to crime be? We can see how one troubling extension from this insight could include isolation of law breakers as a viable solution. Isolation of them would mean separating them from the general population until they no longer pose a threat. In addition, without free will for leverage, how could we prevent other problematic proposals for punishment, like using advances in cognitive neuroscience, psycho-pharmaceuticals, and behavioral modification to realign the subjects' attitudes and disposition to minimize the risk of repeat offenses? Certainly, there are worrisome implications from adopting a deterministic worldview that we ought to consider.

Stanton Wortham 20:58
It's really clear that if this is true, your hypothesis about the lack of free will, then we'd have to pretty radically redesign our system of justice and punishment. Your argument about neuroscientific evidence finally resolving the debate, such that we now know that free will is an illusion, is one that has pulled me up short. I wonder, as you've thought about this yourself, are you convinced by this? It would have implications for how you think about yourself and how you engage with other people in your life? Is this something that you have adopted too? Or is it just something you're tossing around?

Greg Fried 21:36
Well, I'm not just tossing it around, because I think it is a profound challenge facing our society that is going to become more and more explicit and more and more powerful as we learn more about the human brain and can interfere in the functioning of the human brain and interfere in the genetic programming of future generations of human beings. But ultimately, I am not convinced by the argument that I have tried to present as forcefully as I have in this. I am still persuaded by the ancient Aristotelian view that experienced at the human scale, the phenomena of life indicate that we have freedom and that it is not possible to live as a human being without the conception of freedom.

So I think that if we lose our sense of freedom, we are on the path to losing our humanity altogether. I agree with my colleague in the philosophy department, Dan McKaughan, that the ethical 'ought' must imply 'can.' In other words, if there are any moral imperatives on us, it has to be possible for us to freely choose to do them. We would

want a very high level of proof indeed for the claims of determinism in cognitive neuroscience. So I think that those claims have been sensationalized to a degree. It's one thing to say that raising one's arm can be predicted by behavior in the brain before the arm is lifted. It's quite another thing to say that freely choosing to fire a gun or to make a decision in how I drive my car so that I'm responsible for speeding. I think there's a profound difference there. I also would need a much more robust degree of proof before I gave up my belief in free will.

Stanton Wortham 24:01
Alright, so it sounds like where we may end up is we all have to be dragged kicking and screaming into neurological determinism. At this point, I'd love to bring in Dr. Young. Would you be willing to ask a couple of questions about this topic?

Liane Young 24:15
Yes. First of all, thank you so much for inviting me to be part of this exciting conversation. It's a real honor to be here with both of you on this podcast. So social psychologists are in the business of figuring out the unconscious influences of our behavior. Many of these influences are actually external to our brains and bodies. There are many, many factors that psychologists have studied, ranging from the weather, the smell of fresh cookies, what our parents decided to name us, to societal level causes such as the power of authority and structural racism. We've been dealing with these kinds of questions for as long as social psychologists have been around. So Greg, I'm interested to know what you think might be unique to this version of the problem of determinism and free will. In some sense, knowing that the causes of my behavior are located within my own self and my own brain, rather than what's going on around me like the way society is set up, is perhaps more comforting rather than disturbing. Many of these accounts within classic and contemporary social psychology are rather rich accounts of behaviors much more complex than raising one's hand or lifting one's finger, and with much more serious social consequences. So I wonder, Greg, what you make of any possible connections between these phenomena in social psychology and the kind of philosophical problem that we've been grappling with here?

Greg Fried 25:48
That is really a great question. I think that the task of philosophy in this is to try to find a way to incorporate the insights of social psychology and cognitive neuroscience into a conception of the free will that respects the complexity of what it means to be human. I think it does help us to understand how in our bodily embodiment, we are influenced in manifold ways by the world around us. So to take one of your examples, racism, we know from research in social psychology that people's cognitive biases are deeply instinctual. Some responses that we would think of as racist are, in fact, unconscious or subconscious and affect us without our truly willing them and choosing them. That can be a relief to people. The question then becomes: where in that process can human freedom intervene in these psychologically-influenced behaviors and begin to deflect the patterns that we want to reject? So I think there has to be some kind of dialogue or dialectic between freedom and all of these determining factors that encase our lives, and being informed about those determining factors does not mean that we are surrendering our freedom. It means we are learning more about what the obstacles to our freedom are and how we can overcome them.

Liane Young 27:59
Thank you. I think that makes a lot of sense that part of the work of the empirical psychologists is to identify and articulate those problems and obstacles. Then we can recruit philosophers and other scholars to help generate some of those solutions. Those may be individual-level solutions or societal-level solutions to overcome some of those obstacles. Indeed, it may also be part of the work to identify obstacles as obstacles in the first place; to figure out what is right and wrong and to determine what are the paths forward.

I think that relates really well to some other work that I wanted to mention by empirical philosophers on folk intuitions about free will and determinism, suggesting that the kind of determinism might matter. So what these folks have found is that the distinction between psychological determinism (our mental states, such as our beliefs and desires, fully determine in ways that are fully predictable) versus biological or neurological determinism (our brain states fully determine our behaviors) makes a difference. What this work has found is that only the latter kind of determinism feels truly threatening to folk intuitions about free will. We don't feel that our free will is undermined by psychological determinism. We feel that we are our sets of beliefs and desires and values. So I also wonder about how this work can shed light on or provide clues to the complicated relationship between our intuitions about free will and implications for conceptions of determinism.

Greg Fried 29:45
Well, I can think of some concrete examples that would help us see what that means. First of all, historically, we have made very important changes in our penal system for people suffering from drug addictions, for example. I think it makes a great deal of sense to recognize that people who suffer from substance abuse are not as freely in control of their behavior and therefore should not be subjected to punishment in prisons. Because of the distinction that you've pointed out, I think Americans are beginning to understand the reasonableness of that change in social policy, in laws, and in the penal institutions. I do think that there's a real place for how fine-tuning these distinctions and making the public aware of them and educating them about the intersections of human behavior and public policy that can make a difference in their lives. That can be very important and very powerful in terms of what changes we make in public policy, especially around issues like drug addiction, but it could also help people address the problem of racism. So many people reject dealing with racism because they feel like they are going to be personally damned to some horrible hell for showing any kind of racial bias. But if people begin to understand that these are contextually determined and that no human being can be entirely free of them, maybe that will help soften the discourse around racial prejudice in our society so that people can make interventions in their own behavior without feeling shame.

Liane Young 32:02
I think that last point that you're making is so interesting. I think that it can be a double-edged sword in that we need to get to a point where people don't feel threatened by the conversation itself. People need to be made aware that structural racism is a society-level problem and that nobody is attacking any one individual for their beliefs, attitudes, or behaviors. And at the same time, I think that each individual needs to feel responsible for

contributing to overcoming that problem. Often in attributing the cause of some behavior to a societal-level cause, it can either feel difficult to try to address that problem as an individual, or that it is not your responsibility to do it because everyone does it, and it's everyone's problem. And so I think trying to navigate those two sets of factors will be really important to do moving forward.

Greg Fried 33:14
I agree with you entirely. I think this is where the science and the philosophy really need to engage in a partnership to think through the implications of this dilemma. It may be true that for the average citizen, their behaviors are to some extent determined by the structural racism in our society, and that there's not a problem with that in terms of their everyday behavior. There is a real problem with that when we get into the justice system, with juries, with judges, and most importantly, now as we're seeing in our society, the behavior of police officers. So if a police officer is drawing his or her gun in response to an implicit bias, that is much more problematic than a human being who crosses the street, seeing somebody of another race because of implicit bias. The one carries with it profound social consequences. The other is something that we can live with. So where do we assign some degree of responsibility in behavior that is, in part determined by social psychological factors? I think that's very complicated, but we do want to assign some responsibility at some point. But I think educating people, educating police officers, about the neuroscience is really important because then they can monitor themselves, we can hope in a way that allows for change.

Liane Young 35:03
Absolutely. I couldn't agree more. I think it's really tricky to figure out how to assign personal responsibility. However, there are other cases in which it actually seems very clear cut, as in the case that you just mentioned -- that there could be societal level influences and at the same time, personal and moral responsibility needs to be assigned. But I think the more general question about when factors that feel external to you should be considered in that equation of calculating personal responsibility will be important to think about.

Stanton Wortham 35:45
Thanks very much, Greg Fried and Liane Young. We really appreciate this interesting conversation. It is definitely a provocative topic and one that I trust is going to continue to evolve as new science is done that will be relevant to addressing these issues.

Thanks to all of you for listening. This is one of the last episodes of the season for us here at Pulled Up Short. We're going to take a break over the summer, and then we'll be back with another season in the Fall of 2021. Please like us on Apple Podcasts or wherever you get your podcasts and recommend us to your friends. We appreciate your support.