

Chapter 1

Free Will & Empirical Arguments for Epiphenomenalism



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Abstract While philosophers have worried about mental causation for centuries, worries about the causal relevance of conscious phenomena are also increasingly featuring in neuroscientific literature. Neuroscientists have regarded the threat of epiphenomenalism as interesting primarily because they have supposed that it entails free will scepticism. However, the steps that get us from a premise about the causal irrelevance of conscious phenomena to a conclusion about free will are not entirely clear. In fact, if we examine popular philosophical accounts of free will, we find, for the most part, nothing to suggest that free will is inconsistent with the presence of unconscious neural precursors to choices. It is only if we adopt highly non-naturalistic assumptions about the mind (e.g. if we embrace Cartesian dualism and locate free choice in the non-physical realm) that it seems plausible to suppose that the neuroscientific data generates a threat to free will.

1.1 Introduction

In philosophy, while concerns about mental causation span back centuries, the question of whether epiphenomenalism undermines free will is surprisingly underexplored. In contemporary literature, worries about mental causation tend to derive from the concern that if there is an adequate physical explanation for every event, this renders the mental causally superfluous (Malcolm 1968, Kim 1989, 1993, 1998, 2005; O'Connor and Churchill 2010). Philosophers have puzzled over the implications of this problem for the viability of non-reductive, emergentist, or dualist theories of mind, but there has been little connection between this dispute and the traditional free will problem.

In contrast, in the neurosciences, researchers typically suppose that any threat to the causal efficacy of the conscious mind is also a threat to free will. Research suggesting that our consciousness of choices occurs too late to causally influence them

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(Libet et al. 1979; Libet 1982, 1985; Soon et al. 2008; Wegner 2002, 2004) has been taken to be interesting primarily *because* it's taken to have drastic implications for free will.

There are three possible explanations for this curious disparity:

1. The empirical case for epiphenomenalism reveals a distinct epiphenomenal threat; one that has more serious implications for freedom than any threat identified by philosophical arguments for epiphenomenalism.
2. Philosophers are oblivious to the threat that epiphenomenalism poses to free will.
3. Empirical researchers are mistaken in supposing that the epiphenomenalist threat they identify really has serious implications for free will.

I will argue that explanation (3) is right. It is not obvious that the empirical arguments for epiphenomenalism really *do* have serious implications for freedom and moral responsibility.

1.2 The Philosophical Worries

Puzzles about how mind and body causally interact have been discussed at least since Elisabeth of Bohemia's famous correspondence with Descartes in 1643 (Atherton 1994, pp. 11–21). Such puzzles led theorists, even close to Descartes' time, to seek alternatives to Cartesian interactionism, such as occasionalism (e.g. Malebranche 1674, 1997), parallelism (e.g. Leibniz 1695, 1989), and monism, both idealist (e.g. Berkeley 1710, 1982) and materialist (e.g. Hobbes 1651, 1994; Cavendish 1664, 2017). And at least since Hodgson (1880) some philosophers have embraced epiphenomenalism.

While contemporary philosophers have predominantly hoped (much like Hobbes and Cavendish in Descartes' own time) that we can make sense of mental causation by rejecting dualism in favour of physicalism, many have been pessimistic about the prospects of completely *reducing* the mental to the physical (Putnam 1967; Fodor 1974; Block and Fodor 1972; Pylyshyn 1984). And "causal exclusion" arguments purport to show that non-reductive physicalists (no less than dualists) may be stuck with problems of mental causation.

As Kim argues, if physics is "causally complete", every physical event has a sufficient causal explanation that appeals only to other physical events. This poses a problem: if we have a sufficient causal explanation of an event in physical terms, this seems to render mental phenomena causally redundant. Unless we are willing (implausibly) to posit constant overdetermination, the mental realm will turn out to be epiphenomenal (Kim 1989, 1993, 1998).

Non-reductive physicalists have supposed that every mental event is realised by a physical event, and hence that mental events may be causally effective on account of their physical underpinnings (e.g. Davidson 1970). But even if this does make

mental *events* causally effective, it does not make them causally effective *qua* their mental features (Stoutland 1980; Honderich 1982; Sosa 1984).

Suppose that event *A* is Zina's spitefully dropping a statue into a pond and event *B* is the statue sinking. Event *A* has certain characteristics, among them its spitefulness. But this looks irrelevant to any explanation of why *A* caused *B*. The spite with which Zina dropped the statue is not part of the reason why it sank. Similarly, if an event's physical realisers sufficiently explain why the event caused another event, the fact that these events also realise mental properties will seem irrelevant. While mental events seem to be realised by causally effective physical events, these events do not seem to be causally effective in virtue of their mental qualities.

These issues are hotly debated, and won't be further explored. Epiphenomenalism remains a highly controversial philosophical thesis.

1.3 The Neuroscientific Worries

Concerns about the irrelevance of the conscious mind in decision-making emerged with Libet's famous study, purporting to show that choices are initiated by unconscious neural events prior to agents becoming consciously aware of forming an intention to act (Libet et al. 1979; Libet 1982, 1985). Recent variations on Libet-style experiments (Soon et al. 2008) provide even stronger evidence of unconscious neural precursors to decisions, and it's often supposed that such research raises serious doubts about free will (e.g. Wegner 2002, 2004).

The alleged threat arises from the suggestion that our sense of conscious will is epiphenomenal. There are notably some serious problems, however, with reaching this conclusion on the basis of the data. Firstly, the neural precursors do not correlate perfectly with the decisions that follow them. Libet himself speculated that agents had some conscious power of veto right up until the last moment, and that this gives us reason to reject the epiphenomenalist conclusion (Libet 1985, 2003). But Libet's reasoning on this matter has garnered serious criticism (e.g. Gallagher 2006).

Studies have also focused on getting participants to make an arbitrary choice about when to press a button or which of two buttons to press, with no strong considerations present in favour of either action. This experimental situation is quite far removed from real life decisions. Perhaps we can delegate this sort of decision-making to unconscious processes more easily than decisions with real consequences, which may require more conscious engagement (Waller 2012).

Waller suggested the studies could be redesigned to test whether morally significant decisions would be similarly initiated unconsciously, by asking participants to make choices with significant outcomes. E.g. gambling with funds that are going to go to a charitable cause. This has since been tested experimentally (Maoz et al. [forthcoming](#)) and the results corroborate Waller's contention that greater conscious input may be present in the case of morally significant choices than is present in that of entirely arbitrary ones. This casts doubt on any inference from the traditional

experimental setup to conclusions about the epiphenomenal nature of consciousness more broadly.

Moreover, even in the case of arbitrary choice, it's not clear whether there may be causally relevant conscious activity correlated with the neural precursors to conscious awareness of the choice. If these neural precursors correlate with *other* conscious activity that typically precedes a choice – contemplating pressing the button, deliberating about pressing the button, etc. – it would be unsurprising that such events tended to both precede choices and influence the chances of the agent making a particular choice. This would not obviously show that the conscious mind was irrelevant to the choices subsequently made (Nahmias 2010; Baumeister et al. 2011).

It would be premature to conclude that consciousness has no causal role to play in initiating choices, given the present state of research. Though it is possible that as such research progresses, stronger neuroscientific evidence may emerge.

1.3.1 What Is “Conscious Will”?

Suppose we take this alleged epiphenomenal threat seriously. There is still some unclarity regarding how the experimental data allows us reach the conclusion that free will is illusory.

Firstly, the notion of “conscious will” is vague. The language of “conscious will” somewhat obscures the fact that willing is usually understood, at least in contemporary thought, to be a sort of mental state, and not a special faculty the agent possesses. The term “consciousness” also needs disambiguation. When we say that “consciousness” or “conscious will” is epiphenomenal, what do we mean by this?

There are numerous different ways in which mental states might be considered “conscious”. At least three categories look directly relevant:

1. *Phenomenal consciousness:*

For present purposes we may group together such things as *qualitative states*, *phenomenal states*, *raw feels*, and *what-it-is-like* states. There seem to be directly sensible qualities to some of our mental states, which provide the character of our subjective experiences. Common examples include sensations of emotion, colour, taste, or pain. As well as ‘qualia’ or ‘raw feels’ this category may include other dimensions of what an experience is like for its subject. It is these phenomenal aspects of consciousness that are sometimes thought to be difficult to capture in objective or physical terms (1958, Nagel 1974; Jackson 1982, 1986, Block 1990).

2. *Access consciousness:*

For present purposes, we may group together *access consciousness*, *informational consciousness*, and *mental states being personally available to awareness*. These categories involve being aware that we are subject to a mental state in such a way that we are able to report being in such a state, and able to take the state

into account in our thoughts and deliberation. It is not obvious that in order to have this sort of access to a state, there must be any particular character to the experience, so access consciousness is typically distinguished from phenomenal consciousness (Block 1995).

3. *Intentional/representational content:*

The philosophical literature, in contrast to neuroscientific literature, often focuses on the intentional or representational contents of mental states; what our beliefs and desires, say, are *about*. Epiphenomenalism is sometimes thought to render these contents causally irrelevant. This seems orthogonal to problems of consciousness understood in either access or phenomenal terms. Even unconscious states can have intentional content. And some philosophers suggest that phenomenal features of consciousness are entirely distinct from intentional ones (Peacocke 1983; Block 1996).

The idea of “conscious will” tends to be invoked frequently, but poorly defined. It is not obvious which sort of consciousness is supposed to (a) have to be causally efficacious in order for free will to be possible and (b) be rendered epiphenomenal by the data.

1.4 Epiphenomenalism and Freedom of the Will

Suppose that we have reason to take the threats to the causal efficacy of consciousness identified in the neuroscientific literature seriously. It is not immediately obvious what the implications are for free will. In order to assess these implications, we need some idea of what free will entails. Let’s take a brief look at some of the leading accounts of free will and at the sorts of requirements typically thought to be necessary preconditions of it.

As the free will dispute has typically focused on determinism rather than epiphenomenalism, the accounts tend to be divided up in terms of their compatibility or incompatibility with determinism; the thesis that the future is fixed by the laws of nature and the way things were in the past.

Popular compatibilist conditions of freedom include the ability to act on the basis of one’s choices (Moore 1903; Ayer 1954; Smart 1961, 1966; Lewis 1981; Berofsky 2002), the ability to respond to reasons (Fischer and Ravizza 1998; Wolf 1990), and the ability to make choices based on one’s deeper values (Frankfurt 1971, Dworkin 1970; Watson 1975).

Incompatibilists typically endorse similar conditions as necessary for free will, but deny that they are sufficient. They tend to also require either that agents are able, in a robust sense, to choose otherwise (Kane 2000, 2002, 2004; Moya 2006, 2007, 2011; Ekstrom 2003; Elzein 2017; Franklin 2018; Kittle 2018) or else that agents are, in some sense, the “ultimate sources” of their own choices (Stump 1999a, b, 2003; Pereboom 2000, 2001, 2003; Zagzebski 2000, 2010; Timpe 2007, 2008;

Shabo 2010; Widerker 2006, 2009). Meeting these conditions is typically thought to require the falsity of determinism.

Note that determinism is unrelated to epiphenomenalism. The question of whether some account of freedom is compatible with determinism has no implications at all for the question of whether it is compatible with epiphenomenalism. While it's surprisingly common to find the two issues conflated (Nahmias (2010) cites a number of instances of this error), the two theses are unconnected.

How do we get from the premise that certain conscious features are epiphenomenal to a conclusion about free will? There must be something required for free will that would plausibly be precluded by the supposed epiphenomenal status of those conscious features. We should therefore look at commonly defended accounts of free will to see whether any of them include requirements that might plausibly be impossible to meet if these conscious features turn out to be epiphenomenal.

There are, however, some restrictions on what sorts of requirement would actually be fruitful here. Proponents of the empirical argument would be well advised to search for requirements which are not only plausibly necessary for free will, but which also meets the following criteria:

1. The requirement must be plausibly inconsistent with epiphenomenalism.
2. While the requirement must be a necessary condition of *free and responsible* action, it should not also be a prerequisite for *any* action (even unfree ones).
3. The requirement must be consistent with the thesis that the mental supervenes on the physical.

The reason for the first condition is obvious. Unless some requirement for freedom is also ruled out by epiphenomenalism, we will not be able to use it in conjunction with epiphenomenalism as a basis from which to infer free will scepticism.

The second requirement might look mysterious. If something is required for action, then it must, *a fortiori*, be required for *free* action. Hence if we can provide a necessary condition of action that would be ruled out by epiphenomenalism, we certainly have a good case for free will scepticism. This is true, but it means the argument is likely to prove too much. While scepticism about free will is commonly thought to be a surprising but nonetheless potentially compelling conclusion, scepticism about agency is far less plausible, and is likely to be seen as an unpalatable implication. Some may be willing to bite this bullet, but for others the implication that there are no agents or actions is more likely to be regarded as a *reductio* of any argument that led to it. Hence the argument will lose a good deal of plausibility if it can only proceed to a sceptical conclusion about free will via a much stronger sceptical conclusion about agency.

The final requirement, that it must be consistent with the claim that the mental supervenes on the physical, seems a basic prerequisite of our having any reason to take the neuroscientific literature seriously in the first place. The entire idea of studying the mind via an investigation of the brain would be misguided unless we were willing to grant this thesis.

The question is whether any of the standard accounts of free will posit requirements that meet these criteria. While the categories of "incompatibilist" and

“compatibilist” are useful in relation to the dispute about determinism, they are not so relevant to the threat from epiphenomenalism. For present purposes, I will divide purported preconditions of free will into those that are also preconditions for any action and those that are preconditions specifically for *free* action. The latter will also be divided into naturalistic requirements and non-naturalistic ones.

1.4.1 Purported Conditions of Action

Under what conditions does behaviour count as genuine action? At a minimum, it must be purposive or goal-directed. But that is not enough; the behaviour of a simple machine could be goal-directed. Plausibly, it must be *consciously* goal directed. The agent must have some intention in acting, and must be aware of it. This is what seems to be lacking in the case of automatistic action, like sleepwalking, which is not typically classed as genuine agency. While sleepwalkers seem to carry out intentions, they are not aware of what they are doing.

This certainly includes a lack of access consciousness; they are unable to report or further reflect on what they are doing. It may be plausible to suppose that agents who are dreaming enjoy phenomenal consciousness; they are, in some sense, aware of the phenomenal qualities presented to them in their dreams. But such agents certainly lack phenomenal consciousness with respect to what they are *actually* doing. The intentions with which they act are disconnected from the behaviour that’s actually occurring.

It seems plausible that agents need access consciousness in order to count as acting at all, and plausible, though more controversial, that agents *might* need phenomenal consciousness to count as acting at all (Shepherd 2015a). The latter will depend on whether a “phenomenal zombie” could still perform actions; a question which is not east to answer (Smithies 2012).

But it is one thing to suppose that agency requires consciousness and quite another to suppose that it requires our mental states to be causally efficacious in *virtue* of their conscious qualities, or that the conscious awareness must *temporally precede* the initiation of choices.

Consider automatic behaviour; the sort that’s performed on “autopilot”. Often agents lack awareness when performing actions that are highly rehearsed; but it’s typically thought to count as acting nonetheless. This is because they are easily able to *acquire* conscious awareness. If you are driving, you might not be aware of indicating to turn, but if someone asks you to explain yourself, you can easily *become* aware of what you are doing. In this case, it is not obvious that the awareness must *precede* the initiation of behaviour; rather, the behaviour and the intentions that motivate it must be easily *accessible* to conscious awareness (Levy and Bayne 2004; Levy 2011; Levy 2013, 2014a).

The reason why access consciousness seems important is because it seems to characterise the sorts of mental processes that might look especially relevant for our control over our behaviour. We tend to be able to consciously report the sorts of

processing that that directly pertain to our deliberate goals, and which might be amenable to rational reflection and scrutiny. In contrast, much of the activity that occurs below the level of awareness is outside of our *direct* control, but may nonetheless be broadly governed by these higher level aims.

Various authors have tried to elucidate the importance of the sorts of processing that tend to be available to conscious awareness in this way. Shepherd (2015b) argues that the sorts of processing that are typically available to conscious introspection are those involved in “executive functions”. The sorts of processes that are *not* available to conscious awareness are those that occur at a sub-personal level, and are not directly accessible to conscious reflection. These are typically subordinate to executive processing. E.g. our explicit intention to pick something up directs our motor processes. Relatedly, Gallagher (2006) notes that we may be expected to directly cognise features of our situation and environment, while subpersonal processes remain largely inaccessible at that level of cognition, despite being broadly directed by processes at that level. Others have noted that our proximal intentions, even if formed fairly automatically, may be directed by distal intentions that are typically available to conscious awareness (Nahmias 2010; Schlosser 2013).

Genuine action typically involves processes of which we are consciously aware, since these have an “executive” or “directing” role. But there is no obvious reason to suppose that the conscious awareness *itself* must be doing the causing. Conscious awareness is an indicator that the processes in question are the sort that characterise genuine agency. But this doesn’t entail that such processes must be *caused* by conscious awareness. And it certainly does not seem as if the “phenomenal feeling” needs to cause the behaviour (Walter 2014). It seems highly dubious to suppose that our intentions must be causally effective *in virtue* of either access consciousness or phenomenal consciousness, even if they must be available to either sort of conscious awareness.

A more plausible suggestion is that we need to act in virtue of the intentional or representational *contents* of our mental states in order to count as genuinely acting; that *what* I desire and believe must be causally relevant to my behaviour. But this is not the focus of any of the empirical literature that aims to undermine free will. It is only really addressed in the philosophical literature. Moreover, this threat, if taken seriously, is far more extensive than *just* a threat to the possibility of free will. It potentially entails that the entire mental realm is devoid of all influence. Few philosophers embrace this conclusion.

Even if agency is possible, however, *free* agency might not be. Epiphenomenal arguments might threaten our ability to act freely or be held morally accountable. Let’s consider broadly naturalistic conditions of freedom; those that do not posit phenomena beyond the reach of scientific investigation.

1.4.2 *Naturalistic Purported Conditions of Freedom*

1.4.2.1 Acting on the Basis of Choices

It is fairly universally supposed that moral responsibility requires the ability to act in accordance with our choices. If an agent is imprisoned or paralysed, or if there are constraints and impediments that hinder her ability to act as she intends to, this would undermine her freedom and her moral accountability (Moore 1903; Ayer 1954; Smart 1961; Lewis 1981; Berofsky 2002).

But epiphenomenal arguments pose no threat to this ability. This requirement says nothing about the way that our decisions are initiated or about the features in virtue of which they count as causally efficacious. It is usually understood simply in terms of counterfactual dependence; an agent meets this requirement if she acts as she has chosen to and would have acted otherwise if she had chosen to act otherwise. Libet-style studies purport to undermine the causal relevance of conscious awareness to agents' choices; they do not purport to undermine the causal relevance of agents' choices to their subsequent actions.

1.4.2.2 Reasons Responsiveness

It's often supposed that our decisions would need to be responsive to reasons in order for us to count as morally responsible (Wolf 1990; Fischer and Ravizza 1998). Schlosser (2013) and Levy (2011, 2013, 2014a, b) have argued that there is a crucial link between conscious awareness and the ability to respond to reasons. They both suppose that it is (broadly) access consciousness that is required for this ability, as opposed to phenomenal consciousness.

The reason why we might suppose that access consciousness is crucial to reasons-responsiveness is that only this sort of conscious processing seems to be governed by norms of consistency in such a way as to be potentially integrated into a rational outlook. Our unconscious processing tends to work in an associative way, and not to be governed by norms of consistency (Levy 2013, 2014a, b).

This gives us reason to suppose that we can only be morally responsible for processes that are accessible to conscious awareness. But it does not seem to entail that our choices must be *initiated* consciously, or that they must be causally efficacious *in virtue* of conscious features.

Automatic action is typically driven by the sorts of intention that can easily be brought to our conscious awareness, even if we often lack awareness when initiating the action (Levy and Bayne 2004; Levy 2011). There seems no reason to suppose that such behaviour is immune to introspection and rational scrutiny.

Moreover, the crucial point for reasons-responsiveness is not that conscious awareness *itself* must be doing the causal work, but that the sorts of processes *of which* we are consciously aware are the sorts that are governed by standards of rational consistency. Even if such processes were initiated by unconscious events,

this would not stop them from being governed by these norms, so it would not preclude them from being reasons-responsive.

1.4.2.3 Harmony with Deeper Values

Plausibly, if our choices are to count as free, they must be driven by desires we don't mind being moved by (Dworkin 1970). Perhaps they must harmonise with our second order volitions, i.e. we must be moved by the first order desires that we want to be moved by (Frankfurt 1971). Perhaps, ultimately, we need our choices to harmonise with our *deepest values* (Watson 1975). It might be thought that our deepest system of values, those with which we rationally identify, constitute the "real self".

There is a strong case for supposing that only conscious processes typically harmonise with our deeper values. Since a moral outlook needs to be integrated into a coherent system, it also needs to be governed by norms of consistency. Unconscious processes do not obey these norms (Levy 2011, 2013). Moreover, it's well known that agents often unconsciously process information in ways that run directly *counter* to their values; in cases of unconscious bias, agents typically find their behaviour reflects attitudes they consciously repudiate; they are often keen to rid themselves of the bias, or to take steps to prevent it from influencing their behaviour (Levy 2013; Levy 2014a, b).

Once again, it is typically argued that access consciousness rather than phenomenal consciousness is relevant here; the sorts of processes we can report and subject to scrutiny are the sorts we can expect to harmonise with our values. What matters is that such processing is governed by norms of rational consistency and may be subject to scrutiny on the basis of values. This is what enables it to harmonise with our values. This does not require the awareness *itself* to cause our decisions or to precede their initiation.

1.4.2.4 Alternative Possibilities

Alternative possibilities are often thought to be important for moral responsibility, though this has been highly controversial since Frankfurt's famous argument for their irrelevance (Frankfurt 1969).

Compatibilists traditionally understand this requirement in terms of a counterfactual dependence between an agent's choices and actions. We have already noted that this is untouched by epiphenomenalism. Incompatibilists, however, tend to have a different understanding of alternative possibilities. They typically require that agents are able to do otherwise holding that past the laws of nature constant. Determinism seems to preclude alternatives so understood.

As already noted, epiphenomenalism does not entail determinism. Perhaps, however, Libet-style studies should *also* be understood as providing evidence for the thesis that our choices are causally determined. Soon et al. (2008) were able to predict an agent's choice between which of two buttons to press (i.e. a decision with

a 50% chance of going either way) with 60% accuracy, well before the agents themselves became consciously aware of deciding. But this does not constitute compelling evidence for determinism; it does not entail that a single outcome is guaranteed. Proponents of indeterminism typically suppose that causation is probabilistic as opposed to deterministic. This is consistent with earlier events raising the probability of later ones.

1.4.3 *Non-Naturalistic Purported Conditions of Freedom*

The naturalistic conditions of freedom appear to be untouched by arguments for epiphenomenalism, but it is not so obvious that the same will be true of non-naturalistic ones.

Sometimes, it is thought that freedom requires Godlike abilities; that free will involves being an “unmoved mover”, able to originate actions independently of any prior events. There are two features that might seem to be preconditions for this; one involves the conscious mind being the ultimate causal source of choices, and the other involves immunity from prior causal influence.

1.4.3.1 **Conscious Origination**

Source incompatibilists typically suppose that determinism threatens free will because it threatens the agent’s status as the *ultimate source* of her own choices and actions. Do epiphenomenalist arguments challenge this? It depends on how we locate agents. If unconscious brain processes are regarded as part of the agent’s efforts, then it’s not obvious that the agent could only be initiating an action if conscious phenomena are initiating it. An agent’s mental processes could be doing the causal work even if the conscious awareness *itself* were not involved in the initiation of choices.

If consciousness is understood merely as a way of accessing our mental states, then this simply doesn’t look like the sort of thing that could intelligibly figure in a causal relation. It’s not obvious how the mere availability of states to conscious awareness *could* cause our choices. And with respect to phenomenal consciousness, again, it seems strange to suppose that the raw *feeling* of making a choice could cause it (Walter 2014).

If consciousness is going to intelligibly figure as an independent cause, it seems that we will need to understand it as something more than just a way in which mental states present themselves to awareness. Rather, we would need to suppose that conscious states are part of an independent *entity* that might exert its own influence.

Perhaps consciousness is taken to be the crucial element of a Cartesian soul. If we suppose that freedom requires the soul to influence action independently of neural events, then perhaps it *would* make sense to suppose that phenomenal

consciousness might be part of something causally influential in its own right. If this is what free will requires, then the empirical case for epiphenomenalism, by showing that consciousness arrives too late to the game, would indeed be showing that the *agent* (presumably, identical to the Cartesian soul and *not* to any neural precursors) could not be the ultimate source of her choices.

1.4.3.2 Immunity from Prior Influence

This requirement might be supplemented with another; perhaps what is required for freedom is not merely that our choices are caused by an independent conscious entity, but also that these choices are *immune* from prior causal influence.

Some incompatibilists suppose that free choices must be *uncaused* (Ginet 2002, 2007, 2008, 2016; McCann 1998, 2012; Goetz 1988, 2008). Presumably, this rules out even probabilistic causation. Does this entail that there can be no correlation between an agent's choices and neural events that precede those choices? This is not obvious. Non-causalists usually suppose that an agent's choices must be *rationaly* explicable, even if they are not *causally* explicable. But suppose that some pattern of neural activity is typically associated with positively assessing a potential course of action. This pattern would then also be correlated with the presence a positive reason to choose it. On the non-causal view, the agent's choice *also* needs to correlate with the presence of such reasons. We would therefore expect the choice and the neural pattern to be correlated to one another as well.

It is only if we presuppose an explicitly non-naturalistic account of the agent and her mental processes (e.g. we suppose that there are *no* correlates between neural processes and the agent's contemplation of reasons) that a non-causal account rules out *any* correlation between the odds of an agent making a particular decision and neural precursors.

Suppose we regard the *agent* as essentially identical to a Cartesian soul, and we suppose that an agent can only have free will insofar as any rational explanation of her behaviour emanates *from* the soul independently of any brain processes. Libet-style studies certainly seem to cast some doubt on whether agents can meet this requirement.

1.5 Epiphenomenalism and Free Will Scepticism

Recall, I argued that, if we are to reach free will scepticism on the basis of evidence for epiphenomenalism, we would need to identify some requirement for free will that also meets the following criteria:

1. The requirement must be plausibly inconsistent with epiphenomenalism.
2. While the requirement must be a necessary condition of *free and responsible* action, it should not also be a prerequisite for *any* action (even unfree ones).

3. The requirement must be consistent with the thesis that the mental supervenes on the physical.

I examined three categories of purported requirements for freedom: conditions of basic agency, naturalistic conditions of free will, and non-naturalistic conditions of free will.

Obviously, none of those conditions that are alleged to be prerequisites for any action will be able to meet condition 2: An argument from *those* conditions is not only going to establish free will scepticism, but will *also* show that there is no agency of any sort. This would certainly undermine free will, but it comes with the implausible implication that actions do not exist either.

Moreover, we found that the sorts of consciousness that might be potentially rendered epiphenomenal by the empirical arguments were likely to be irrelevant to the conditions of action. While such arguments might show that *phenomenal* consciousness occurs after the initiation of a choice, it is not obvious that this timing issue is especially relevant to the role of access consciousness, and the empirical arguments do not tell us anything about the causal role of intentional or representational content.

It is only if the *latter* is shown to be epiphenomenal that we would plausibly have a serious threat to agency; while the philosophical arguments might be thought to render intentional content epiphenomenal, the empirical arguments do not appear to address it at all. The requirement that we be able to act in virtue of intentional contents, if it is a requirement of free will, does not meet condition 2 in any case, and in relation to the *sorts* of epiphenomenalism plausibly entailed by the empirical research, doesn't meet condition 1 either.

Let's turn to the naturalistic requirements for free will.

The possibility of meeting the purported naturalistic requirements for free will, I suggested is not threatened by epiphenomenalism, so these requirements do not meet criterion 1.

While our choices can only meet the requirements of being reasons-responsive and in harmony with our deeper values if those decisions involve processing of the sort that we *are* typically conscious of, there is no reason to suppose that any sort of conscious awareness must cause or even temporally precede such processing in order for it to be reasons responsive or to harmonise with our values. And the empirical studies have no bearing at all on whether our choices are causally determined.

Finally, the non-naturalistic purported requirements of freedom do not meet criterion 3. If these are understood so as to genuinely meet criterion 1 (i.e. as involving a causal role for consciousness in itself and/or devoid of any correlation with prior neural events), this would require us to identify agents with something non-physical; e.g. a ghostly soul, which is an unmoved mover and is the ultimate source of choices and action. This is inconsistent with the thesis that the mental supervenes on the physical.

Such studies arguably ought to matter to someone with a classic Cartesian interactionist view. Since phenomenal consciousness, on this view, resides in an independent non-physical mind, and this causally influences brain activity, perhaps

phenomenal awareness must *precede* the initiation of choices. But Cartesian interactionism is hardly popular nowadays. There are reasons to reject it quite independently of the empirical case for epiphenomenalism; many of these reasons were identified immediately after its inception in the seventeenth century.

As noted earlier, this led other historical theorists to favour monism (idealist and materialist) or to favour parallelist or occasionalist analyses of the relation between the mental and the physical. The problem is, it's not obvious that proponents of alternatives to interactionism who endorse highly non-naturalistic accounts of free will have any good reason to suppose that neuroscientific research tells us anything *at all* about the mind. These views place the mind thoroughly outside of the reach of scientific investigation.

Moreover, contemporary philosophers overwhelmingly endorse physicalism. Those who take seriously non-naturalistic conditions of freedom are rare. Those who endorse those conditions *alongside* Cartesian interactionism are rarer still (an endangered species, if not extinct).

Libet-style studies present no evidence for supposing that we cannot meet naturalistic conditions of freedom. And as for non-naturalistic ones, anyone who takes neuroscientific research seriously had overwhelming reason to suppose nobody could meet *those* quite independently of these studies. In contrast, those who maintain that we do meet non-naturalistic conditions, for the most part, must regard such things as outside of the reach of neuroscientific research.

1.6 Conclusion

The landscape of the free will dispute is largely unaffected by the empirical case for epiphenomenalism. Surprisingly, it seems that empirical researchers have been prone to presupposing a picture of freedom, from the start, that would be completely inconsistent with sort of minimal physicalism upon which the whole enterprise of neuroscience is based. Somehow, they are still haunted by the ghost of Cartesian interactionism.

Insofar as we endorse a broadly naturalistic and physicalist picture of the mind (a picture that I think we have overwhelmingly good reason to embrace), it is not obvious that the experimental data provides any serious challenge to meeting the conditions of freedom that could plausibly be met consistent with that picture anyway. In contrast, for anyone who explicitly rejects that picture, the empirical data will be regarded as being of dubious relevance from the start.

There are, I believe, compelling reasons on the basis of which to embrace free will scepticism. But these reasons have little to do with the presence of unconscious precursors to the decisions we make.

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