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**Where's the action?
Epiphenomenalism and the problem of free will**

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Some philosophers argue that Descartes was wrong when he characterized animals as purely physical automata – robots devoid of consciousness. It seems to them obvious that animals (tigers, lions, and bears, as well as chimps, dogs, and dolphins, and so forth) are conscious. There are other philosophers who argue that it is not beyond the realm of possibilities that robots and other artificial agents may someday be conscious – and it is certainly practical to take the intentional stance toward them (the robots as well as the philosophers) even now. I'm not sure that there are philosophers who would deny consciousness to animals but affirm the possibility of consciousness in robots. In any case, and in whatever way these various philosophers define consciousness, the majority of them do attribute consciousness to humans. Amongst this group, however, there are philosophers and scientists who want to reaffirm the idea, explicated by Shadworth Holloway Hodgson in 1870, that in regard to action the presence of consciousness does not matter since it plays no causal role. Hodgson's brain generated the following thought: neural events form an autonomous causal chain that is independent of any accompanying conscious mental states. Consciousness is epiphenomenal, incapable of having any effect on the nervous system. James (1890, 130) summarizes the situation:

To Descartes belongs the credit of having first been bold enough to conceive of a completely self-sufficing nervous mechanism which should be able to perform complicated and apparently intelligent acts. By a singularly arbitrary restriction, however, Descartes stopped short at man, and while contending that in beasts the nervous machinery was all, he held that the higher acts of man were the result of the agency of his rational soul. The opinion that beasts have no consciousness at all was of course too paradoxical to maintain itself long as anything more than a curious item in the history of philosophy. And with its abandonment the

very notion that the nervous system *per se* might work the work of intelligence, which was an integral, though detachable part of the whole theory, seemed also to slip out of men's conception, until, in this century, the elaboration of the doctrine of reflex action made it possible and natural that it should again arise. But it was not till 1870, I believe, that Mr. Hodgson made the decisive step, by saying that feelings, no matter how intensely they may be present, can have no causal efficacy whatever, and comparing them to the colors laid on the surface of a mosaic, of which the events in the nervous system are represented by the stones. Obviously the stones are held in place by each other and not by the several colors which they support.¹

The question, "Does consciousness cause behavior?" is thus answered in the negative by epiphenomenalists. It is often thought that (1) this question, *as it is commonly understood*,² is directly related to the question of free will, and (2) if one is an epiphenomenalist one cannot accept the idea of free will. Although it seems that the truth of the second statement would imply the truth of first one, I will argue that (1) is false, even if (2) is true (although, to be clear, I don't think that (2) is true). The reason for this has to do with what I am calling the common understanding of the question. This understanding can be stated succinctly as follows: when we ask whether consciousness causes behavior we are asking whether consciousness plays a role in the initiation of bodily movement and motor control. I do not want to claim that this understanding controls the entire discussion of free will. I suggest, however, that it does characterize a large part of the thinking that goes on in one corner of the discussion, specifically in the debates between epiphenomenalists and interactionists. I'll try to present evidence or examples for how pervasive this understanding is, at least in this one small corner of philosophical discussion.

The question as commonly understood

The common understanding of the question can be seen in the epiphenomenalist answer where causal efficacy is attributed to neural mechanisms but not to consciousness. Neural events cause bodily movement and consciousness, but consciousness cannot cause neural

¹ The idea that even if the animal were conscious nothing would be added to the production of behavior, even in animals of the human type, was first voiced by La Mettrie (1745), and then by Cabanis (1802), and was further explicated by Hodgson (1870) and Huxley (1874).

² I will outline what I call the "common understanding" of this question below. By 'common understanding', I mean an understanding (or misunderstanding) that is found amongst many philosophers and scientists.

events or bodily movement. The understanding of the question itself, however, had already been set by Descartes and involves the Cartesian concept of mind as a mental space in which I control my own thoughts and actions. Strictly speaking, for Descartes, only mental actions (volitions) are free; actions of the body are not free, but are governed by physical laws.³ This concept of the mind, as an interior space that is accessible to reflection, frames the modern question. On the Cartesian view, the problem is to explain how the mind directs the body, since what makes a certain bodily movement an action is the contribution of these mental processes. Descartes suggested that the mental events somehow interact with the brain, which then activates the muscles.⁴ Without such interaction we have mere behavior, the sort of thing possible for automata and animals. Unless the action is initiated in the mind – acted out, in some cases, explicitly in imagination – then the external behavior is not really an action. Action on this definition is always voluntary or intentional action. If my bodily movement is not intentional, then it is mere behavior, something like reflex behavior. If my bodily movement is determined by something other than my own reflective thought, then it is involuntary movement, but not action.

The epiphenomenalist adopts the same Cartesian framework and simply answers "no" to the question. Action is nothing more than motor behavior determined by processes other than conscious thought. The epiphenomenalist does not deny that there is conscious thought, or even necessarily that conscious thought appears to be something similar to that

³ The roots of this modern idea go back at least as far as the Stoics. They helped to relocate certain important aspects of action. For Ancient Greek thinkers like Aristotle, morally significant action was something that happened publicly, in the world, as a display of moral character (Arendt 1958). In Stoic philosophy, the better parts of action are moved into the interior of the person. It no longer matters whether the external expression of action is even possible – and it can be made impossible by the constraints of the situation, for example, being chained up in prison. What matters is the integrity and intentions of one's interior life; what one does, one does primarily within the space of one's own mental realm. As we then find this thought developed in Augustine (395), one will be judged not simply by external behavior, but by one's internal intentions, which define the significance of one's actions. As is well known, Descartes' concept of the mind as an interior mental space in which the exercise of will means affirming or denying ideas, derives from this tradition. For Descartes it is difficult to speak of the freedom of mixed or composite actions, i.e., those involving mental states (volitions) followed by bodily movement. (see e.g., Gaukroger 1997; Chappell 1994).

⁴ "Now the action of the soul consists entirely in this, that simply by willing it makes the small [pineal] gland to which it is closely united move in the way requisite for producing the effect aimed at in the volition when we will to walk or to move the body in any manner, this volition causes the gland to impel the spirits toward the muscles which bring about this effect" (Descartes 1649, §§ xli, xlili). Concerning the will he also writes: "Our volitions, in turn, are also of two kinds. Some actions of the soul terminate in the soul itself, as when we will to love God, or in general apply our thought to some non-material object. Our other actions terminate in our body, as when from our merely willing to walk, it follows that our legs are moved and that we walk" (1649, § xviii).

which Descartes describes. But consciousness simply does not have causal efficacy in regard to the organism's behavior.

On this reading, it is possible for a Cartesian and an epiphenomenalist to agree on the phenomenology, but disagree on the etiology of action. What is the phenomenology that they could agree on? Allegedly it is just this: when I act I reflectively experience having a desire or intention and then in some way experience the generation of bodily movement. My action appears to be formed in these mental processes, and insofar as I am conscious of these mental processes along with my bodily movements, my actions appear to be under my conscious control. The Cartesian will then say that what appears to be the case is the case; the epiphenomenalist will say that what appears to be the case is not the case. Both are answering the same question. Do these mental processes cause the bodily movements which constitute my behavior? The idea of free action emerges if the answer is yes. The intention that we experience and the movement that follows is the result of our willing to do the action. If the answer is no, then the intention is nothing more than a feeling produced by brain processes that really control the action. My sense of agency is simply a by-product of neural happenings, and it lacks veracity.

The concept of free will, then, commonly gets understood in terms of this question. Does the conscious mental event operate as a cause that moves or directs the body? Is there some kind of direct transformation from conscious willing to moving muscles? Within this Cartesian frame of mind, Carpenter (1874) describes the mental state as closing a physical circuit in the "nerve-force" or as a translation between the psychical and the physical. For the epiphenomenalist, however, there is no interaction, no circuit to be closed, no translation. To say there is, is to say that physical causality is insufficient to explain physical events.

Reflective and perceptual theories

Within this debate different views of how consciousness relates to action are sometimes cast in terms of a reflective theory of how movements are under conscious control. On this kind of theory consciousness enters into the explanation of action just in so far as my action is controlled by my introspectively reflective choice-making, together with a self-monitoring of movement. The reflective theory, as Naomi Eilan characterizes it, "holds that it is some form of reflection on some aspect of the intention or the action that makes the action conscious" (2003: 189), and that puts me in control. That is, attentional consciousness is directed at my inner intention, and at how that intention is translated into bodily movement.⁵ Perceptual theories, in contrast, state

⁵ A recent example of this view can be found in Metzinger (2003: 422), explicated in his own specialized terminology. "Conscious volition is generated by integrating abstract goal representations or concrete self-simulations into the current model of the phenomenal intentionality relations as object components, in a process of decision or

that "it is some form of consciousness of the environment that makes the action conscious" (*ibid*). Eilan specifies this by explaining that perception plays two knowledge-yielding roles in regard to action. First, it delivers knowledge of the environmental objects or events that we target with the action. Second, perceptual feedback provides knowledge of whether the action was properly accomplished (see Eilan 2003: 190).

We can clarify the difference between the reflective and perceptual theories by considering a simple case of normal action such as getting a drink. I'm thirsty and decide to get a drink. I get up from my desk and walk to the fridge, open it and reach in for a drink. On the reflective theory, my action originates in (is caused by) my conscious decision to get a drink, and this conscious decision is usually described in terms of becoming aware of my desire for a drink motivated by thirst sensations, having a belief that there is something to drink in the fridge, and then, for just these reasons consciously moving my body in the direction of the drink. This may be an oversimplified version of the story, but it provides a clear indication of the kinds of conscious processes required to effect the action according to this theory. The basic idea is that I initiate and control my action by consciously deciding on what I want, and consciously moving my body to accomplish the goal. Consciousness, on this view, is self-attending or self-monitoring. On the perceptual theory, in contrast, consciousness is primarily directed towards the world. I'm conscious of the thing that I want to get, where I'm moving and what I'm looking for – the fridge, the drink. This perception-for-action is complemented by perceptual feedback – proprioceptive and visual – that tells me that I've accomplished (or failed to accomplish) my goal. Perceptual consciousness seems important for making the action successful, and so plays a necessary and causal role in moving the action along.

The perceptual theory of how consciousness causes behavior, however, fares no better than the reflective theory from the point of view of epiphenomenalism. All of the perceptual aspects described above can be causally explained in terms of third-person physical mechanisms. The kind of perceptual information described by the perceptual theory is precisely the kind of perceptual input that is required for motor control. Indeed, most perceptual information of this sort is unconsciously processed, and, according to epiphenomenalism, it is that information processing that is running the show (see e.g., Jeannerod 2003; Pockett, this volume, for a summary of such accounts). Clearly, we can build a non-

selection." The self-simulation, which forms the object component of this process, is in fact a conscious "opaque simulation" of "a possible motor pattern" (p. 423), i.e., a possible movement of my own body. An opaque simulation is one of which we are explicitly conscious. "A *volitional first-person* perspective – the phenomenal experience of practical intentionality – emerges if two conditions are satisfied. First, the object component must be constituted by a particular self-simulatum, by a mental simulation of a concrete behavioral pattern, for example, like getting up and walking toward the refrigerator. Second, the relationship depicted on the level of conscious experience is one of *currently selecting* this particular behavioral pattern, as simulated."

conscious robot that could retrieve a drink from the fridge, and it is also quite clear that the initial motivation – our thirst – is itself reducible to non-conscious processes that launch the larger action process. Consciousness may keep us informed about what is going on in broad and general terms, it can act as a "dormant monitor" (Jeannerod 2003: 162), and so allow us to know what we are doing, but it plays no role in the causal processes that move us. We, as conscious animals, are seemingly just along for the ride.

Differences between reflective and perceptual theories aside, what becomes clear about the way the question gets asked (and, as I will argue, what is problematic about this discourse when it is applied to the issue of free will), is summarized nicely by Joëlle Proust (2003: 202). "Standard philosophical approaches [to] action define action in terms of a particular psychological state causing a relevant bodily movement." She indicates that there is "now widespread convergence on this causal approach," even if there is some disagreement about the kind of psychological state involved. The familiar candidates, at least on the reflective approach, are desire and belief (Davidson 1980; Goldman 1970) or intentions (Searle 1983; Mele 1992), providing conceptual reasons for acting. The best arguments for giving causal efficacy to consciousness are posed in these terms, and these terms are precisely the ones rejected by epiphenomenalism. An epiphenomenalist might say that there is no necessary connection between the justification of action and the cause of action, since animals are capable of purposeful actions without having a worked out conceptual understanding of why they acted that way (see Proust 2003: 203-204). And we know that even humans who may have well-thought out reasons for acting in a particular way, may in fact be acting in that way due to different and unconscious reasons.

Proust's examination of "minimal" actions (Bach 1978), for example, postural shifts, pre-attentive movements such as the scratching of an itch or avoiding an object in the environment – even cast in terms of Searle's (1983) notion of "intention in action," which specifies the details of how intentions are to be realized, and even if it drops the quest for large or complex psychological states in favor of more perceptual models – retains the focus on causal control of relevant bodily movements. "An intention in action has to do with the routine, unplanned ways of coping with the environment ... it also accounts for the specific dynamics of the bodily movements through which an action is being performed" (Proust 2003: 206). This brings us back to perceptual processes, and as Proust notes, the difficulty (although not for epiphenomenalists) is that these minimal actions may be fully unconscious. For Proust, "what is pertinent is whether or not the bodily movements tend to be under the agent's guidance. ... Whatever the causal antecedents of a specific goal-directed movement may be, what makes it an action is the contribution of the corresponding agent to actively maintain the orientation of his bodily effort towards achieving a target event" (p. 207). On this view, as on the

"standard philosophical approaches," or on what I have called the common understanding of the question, which includes the epiphenomenal view, the agent performs its action by keeping its body under control. It does this either explicitly for reflective conscious reasons, or in an implicit (pre-reflective) perceptual way, or unconsciously.

In general terms I think that a good understanding of motor control and the performance of action can be worked out in terms of perceptual and non-conscious processes (see Gallagher 1995). The problem, however, is that these issues get carried over into questions about whether action is free or not, and more generally into debates about free will, and this is where things start to go wrong.

Libetarian experiments

A good example of how things can go wrong can be found in the debates that surround the experiments conducted by Benjamin Libet (1985; 1992; 1996; Libet *et al.* 1983). As he indicates, "The operational definition of free will in these experiments was in accord with common views" (1999: 47). Libet's experiments show that motor action and the sense of agency depend on neurological events that we do not consciously control, and that happen before our conscious awareness of deciding or moving. In one of Libet's experiments subjects with their hands on a tabletop are asked to flick their wrists whenever they want to. Their brain activity is monitored with special attention given to the time course of brain activity leading up to the movement, between 500-1000 ms (0.5 to 1 sec). Just before the flick, there is 50 ms of activity in the motor nerves descending from motor cortex to the wrist. But this is preceded by several hundred (up to 800) ms of brain activity known as the readiness potential (RP). Subjects report when they were first aware of their decision (or urge or intention) to move their wrists by referencing a large clock that allows them to report fractions of a second. It turns out that on average, 350 ms before they are conscious of deciding (or of having an urge) to move, their brains are already working on the motor processes that will result in the movement. Thus, voluntary acts are "initiated by unconscious cerebral processes before conscious intention appears" (Libet 1985). The brain seemingly decides and then enacts its decisions in a nonconscious fashion, on a subpersonal level, but also inventively tricks us into thinking that we consciously decide matters and that our actions are personal events.

These results motivate a question, which Libet poses in precise terms: "The initiation of the freely voluntary act appears to begin in the brain unconsciously, well before the person consciously knows he wants to act. Is there, then, any role for conscious will in the performance of a voluntary act?" (Libet 1999: 51). The epiphenomenalist interpretation of these results is that what we call free will is nothing more than a false sense or impression, an illusion (e.g., Wegner 2002). Libet himself answers in the positive: consciousness can have an effect on our action, and free will is possible, because there is still approximately 150 ms

remaining after we become conscious of our intent to move, and before we move. So, he suggests, we have time to consciously veto the movement (1985: 2003).

Do these experiments actually address the question of free will? Only on the supposition that the question is correctly framed in terms of initiation and control of bodily movement, which is, as I indicated, the common understanding of the question. Patrick Haggard, who extends Libet's experiments to demonstrate the importance of efferent binding, clearly indicates this supposition, suggesting that the experiments reframe the standard philosophical views. "A further consequence of the efferent binding approach is to reorder the traditional philosophical priorities in this area. The central philosophical question about action has been whether conscious free will exists. That is, how can 'I' control my body?" (Haggard 2003: 113).⁶ On his view, however, Haggard maintains that the question of free will becomes unimportant. Haggard, however, is not attempting to make a clear distinction between the question of motor control and the question of free will; indeed, for him, apparently, the question of free will is a question about motor control. Rather, his concern is to dismiss reflective theories of free will and to focus on a more specific aspect of motor control, namely, in Searle's terms, intention in action rather than prior intention. The question becomes, "*how* does my will or intention become associated with the actions [i.e., the bodily movements] that it causes" (113). Will or intention, in action, is captured, for Haggard, in the milliseconds of physiological signals of the lateralized readiness potential, which is a more specific part of the RP. Approximately 500 ms prior to the onset of movement, the bilateral RP activity begins to lateralize to the motor cortex contralateral to the hand that will move. It is this lateralized signal that generates not only the movement, but our awareness of initiating the movement. "This view places consciousness of intention much closer to the detailed pattern of motor execution than some other accounts. [Awareness of willing] thus looks rather like intention in action, and much less like prior intention" (118). Thus, consciousness of an action is "intertwined with the internal models thought to underlie movement control" (119).

The common understanding in the standard reflective, perceptual, or epiphenomenal theories, as well as in the recent debates richly informed by neuroscience, is that free will is either explained, or explained away, by what we have learned about motor control, that is, about how "I" control my body. I propose, however, that these are two different questions, in the same way that "Shall we go for a ride?" is different from "How does this car work?" You should think it strange if in response to your question, "Shall we go for a ride today?" I start to tell you in precise terms how the internal combustion engine in my car turns the wheels. Developing a

⁶ Haggard and Libet (2001) frame the question in the same way, referring to it as the traditional concept of free will: "how can a mental state (my conscious intention) initiate the neural events in the motor areas of the brain that lead to my body movement?" (p. 47)

good answer to one of these questions is not the same as answering the other.

The best answers we have to the question of motor control indicate that most control processes happen at a sub-personal, unconscious level. As we move through the world we do not normally monitor the specifics of our motor action in any explicitly conscious way. As I walk out to the beach I am not normally conscious of how I am activating my leg muscles. The object of my awareness is the beach, the ocean, the anticipated enjoyment of sitting in the sun and reading the latest volume on voluntary action, or perhaps a troubling discussion I've just had with my friend, etc. Body schematic processes that involve proprioception, efference copy, forward comparators, ecological information etc., keep me moving in the right direction. Both phenomenology and neuropsychology support a combination of perceptual and non-conscious explanations of how we control bodily movements, and they rule out reflective theory in the normal case. That is, in the normal situation, we do not require a second-order representation of the bodily movement; we do not have to be reflectively conscious of the onset of the action or the course of the movement as we execute it. Rather, in moving, input from our perceptual experience of the objects that we target and perceptual-ecological feedback about our bodily performance contribute to motor control. In this context, some of the information required for motor control is consciously generated, as when I decide to reach and grasp this particular object rather than another, or when I have a general idea which way the beach is located. In addition, however, much of the information is generated non-consciously, for example, the precise visual information that guides the shape of my grasp (Jeannerod 1997, 2003). In regard to these latter aspects, where conscious awareness adds nothing to motor control, and may even interfere with the timing or smoothness of action, the epiphenomenalist view is correct.

We should expect that answers to how I control my body, or how I make my body move, will be of this sort. That most of this control happens non-consciously is for the best. If, as in the case of deafferentation (which involves loss of proprioceptive feedback), we had to control our movement consciously or reflectively (Gallagher and Cole 1995), or if we were normally required to consciously represent our movements in a Cartesian mental space before we effected them in worldly space, we would have to exert great cognitive effort and slow things down to a significant degree.⁷ Libet's results, then, are of no surprise unless we think that we control our bodily movements in a conscious, and primarily reflective way. The Libetarian experiments are precisely about the control of bodily movement, although even in this

⁷ Jeannerod (2003:159) notes: "The shift from automatic to [consciously monitored] controlled execution involves a change in the kinematics of the whole [grasping] movement; movement time increases, maximum grip aperture is larger, and the general accuracy degrades." Also see Gallagher (2005).

regard they are limited insofar as they effect an atypical involution of the question of motor control. In the experimental situation we are asked to pay attention to all of the processes that we normally do *not* attend to, and to move our body in a way that we do not usually move it (in a rough sense, we are asked to act in a way that is similar to the way that the deafferented subject is required to act).

These experiments, however, and more generally the broader discussions of motor control, have nothing to tell us about free will *per se*. If they contribute to a justification of perceptual or epiphenomenal theories of how we control our movement, these are not theories that address the question of free will. The question of free will is a different question.

The question of free will

As in the experiments, something similar happens in standard philosophical contexts when philosophers try to find examples of free action. There is a long tradition of appealing to examples of bodily movements in discussions of free will, e.g., "Look how I can freely raise my arm" (see, for instance, Chisholm 1964; Searle 1984; Mohrhoff 1999).⁸ Lowe (1999: 235-36), for example, claims that

[i]n the case of normal voluntary action, movements of the agent's body have amongst their causes intentional states of that agent which are 'about' just such movements. For instance, when I try to raise my arm and succeed in doing so, my arm goes up – and amongst the causes of its going up are such items as a desire of mine *that my arm should go up*. The intentional causes of physical events are always 'directed' upon the occurrence of just such events, at least where normal voluntary action is concerned.

Zhu, who characterizes free will as "a mediating executive mental process, which somehow puts the bodily parts into action," thinks of motor control as the "prototype" of free action (2003: 64). Such philosophical reflections, often cast in terms of interactionism (mind-body or mind-brain) and specifically framed by the mind-body problem, may be what send the neuroscientists looking in the wrong place for free will, namely in the realm of motor control processes, which generally turn out to be subpersonal processes.⁹

⁸ Even Aristotle offers an example like this: "an agent acts voluntarily because the initiative in moving the parts of the body which act as instruments rests with the agent himself" (*Nicomachean Ethics* 1110a15).

⁹ I'm reminded here of the tragic crash of an airliner brought on because the entire cockpit crew had focused their attention on a malfunctioning signal light in an attempt to fix it,

The attempt to frame the question of free will in terms of these subpersonal, motor control processes – either to dismiss it or to save it – is misguided for at least two reasons. First, free will cannot be squeezed into timeframes of 150 - 350 msec; free will is a longer-term phenomenon, is too slow for normal motor control, and, I will argue, depends on consciousness. Second, the notion of free will does not apply primarily to abstract motor processes or even to bodily movements that make up intentional actions -- rather it applies to intentional actions themselves, described at the highest pragmatic level of description. I've offered a clarification of these points in other places (Gallagher 2005; Gazzaniga and Gallagher 1998). Here I will provide a summary with the help of an example.

First, in regard to timeframe, the kinds of processes associated with free actions are not made at the spur of the moment -- they are not momentary and cannot fit within the thin phenomenology of the milliseconds between RP and movement. The following example reflects the distinction between fast movement under automatic control, and slower voluntary action. Let me note, however, that automatic movement is not the opposite of voluntary movement. Fast automatic movement may be purely reflex, or it may be voluntary in the sense that it may fit into and serve an intentional action.

At time T something moves in the grass next to my feet. At $T+150$ ms the amygdala in my brain is activated, and before I know why, at $T+200$ ms I jump and move several yards away. Here, the entire set of movements can be explained purely in terms of non-conscious perceptual processes, neurons firing and muscles contracting, together with an evolutionary account of why our system is designed in this way, etc. My behavior, of course, motivates my awareness of what is happening and by $T+1000$ ms I see that what moved in the grass was a small harmless lizard. My next move is not of the same sort. At $T+5000$ ms, after observing the kind of lizard it is, I decide to catch it for my lizard collection. At $T+5150$ ms I take a step back and *voluntarily* make a quick reach for the lizard.

My choice to catch the lizard is quite different from the reflex behavior. What goes into this decision involves awareness of what has just happened (I would not have decided to catch the lizard if I had not become conscious that there was a lizard there) plus recognition of the lizard as something I could appreciate. At $T+5150$ ms I take a step back and reach for it. One could focus on this movement and say: at $T+4650$ ms without my awareness, processes in my brain were already underway to prepare for my reaching action, before I had even decided to catch the snake – therefore, what seemed to be my free decision was actually predetermined by my brain. But this ignores the context defined by the larger timeframe -- which involves previous movement and a conscious recognition of the lizard. Furthermore, it could easily happen that things don't go as fast as

but totally lost track of the fact that the plane was losing altitude. They were clearly looking in the wrong place and at the wrong problem.

I've portrayed, and perhaps, waiting for the strategic moment, I don't actually reach for the lizard until 10 seconds after I made the decision that it would be a good addition to my collection. Now Libet and some philosophers might insist that an extra decision would have to be made to initiate my bodily movement precisely at that time. But it is clear that any such decision about moving is already under the influence of the initial conscious decision to catch the lizard. Although I do not deny that the bodily movement is intimately connected with my action, my action is not well described in terms of making bodily movements, but rather in terms of attempting to catch the lizard for my collection, and this is spread out over a larger timeframe than the experimental framework of milliseconds.

This leads to the second point, namely about the proper level of description relevant to free will. As I have been suggesting, and in contrast to the common understanding, the question of free will is not about bodily movements, but about intentional actions. The kinds of actions that we freely decide are not the sort of involuted bodily movements described by Libet's experiments. If I am reaching to catch the lizard and you stop and ask what I'm doing, I am very unlikely to say any of the following: "I am activating my neurons." "I am flexing my muscles." "I am moving my arm." "I am reaching and grasping." These are descriptions appropriate for a discussion of motor control and bodily movement, but not for the action in which I am engaged. Rather, I would probably say "I am trying to catch the this lizard for my collection." And this is a good description of what I freely decided to do.

I suggest that the temporal framework for the exercise of free will is, at a minimum, the temporal framework that allows for the process to be informed by a conscious reflection of a certain type. This conscious reflection is not the sort described by the reflective theory. According to this theory my reflective regard would be focused on my beliefs and desires, and how to move my body in order to achieve a goal. But when I am reaching for the lizard I am not at all thinking about either my mental states or how to move my body – if I'm thinking about anything, I'm thinking about catching the lizard. My decision to catch the lizard is the result of a conscious reflection that is *embedded* or *situated* in the particular context that is defined by the present circumstance of encountering the lizard, and the fact that I have a lizard collection. This embedded or situated reflection is neither introspective nor focused on my body. As described by Gallagher and Marcel (1999: 25) it is "a first-person reflective consciousness that is embedded in a pragmatically or socially contextualized situation. It involves the type of activity that I engage in when someone asks me what I am doing or what I plan to do." In such reflection I do not make consciousness the direct introspective object of my reflection; I do not reflect on my beliefs and desires as states within a mental space; nor do I reflectively consider how I ought to move my arm or shape my grasp. Rather I start to think matters through in terms of the object that I am attending to (the lizard), the collection that I have,

and the possible actions that I can take (leave it or catch it). When I decide to catch the lizard, I make what, in contrast to a reflex action, must be described as a conscious free choice, and this choice shapes my actions.¹⁰

In conscious deliberation of the sort found in situated reflection certain things in the environment begin to matter to the agent. Meaning and interpretation come into the picture. The conscious deliberation of the agent, which involves memory and knowledge about lizards and such things, rather than being epiphenomenal, has a real effect on behavior. Why I reach to catch the lizard would be inexplicable without recourse to this kind of situated reflection. Some epiphenomenalists might object that this relegates the explanation to a "space of reasons" rather than a "space of causes," and at best explains the motivation, but not the cause of the action (cf. McDowell 1996). My reflective decision to catch the lizard does not *cause* me to try to do so. But this narrow definition of causality already begs the question and limits the notion of causality to the determined mechanics of motor control. That is, as I am suggesting, it frames the question of free will in precisely the wrong way. If the notion of causality at stake in this debate is narrowly construed on the traditional billiard ball model of determined mechanisms, then the question of free will is not about causality at all. Yet, it seems to me undeniable that the embedded reflection described here does have an effect on my action, and must play a role in the explanation of how (and not just why) that action is generated.

To the extent that consciousness enters into the ongoing production of action, and contributes to the production of further action, even if significant aspects of this action rely on automatic non-conscious motor control, our actions are voluntary. Voluntary actions are not about neurons, muscles, body parts, or even movement -- all of which play some part in what is happening, and for the most part, do so non-consciously. Rather, all such processes are carried along by (and are intentional because of) my conscious decision to catch the lizard -- that is, by what is best described on a personal level as my intentional action. The exercise of free will cannot be captured in a description of neural activity or muscle activation or bodily movement.

¹⁰ I think this view is consistent with the general sense of Josef Perner's (2003) "dual control" theory of action, setting aside his requirement for a higher order thought (HOT) account of consciousness. Embedded reflection does not need to be at the higher order level, and the problem that Perner attempts to solve with the HOT theory can be addressed by the phenomenological notion of pre-reflective self-consciousness (see Gallagher and Zahavi 2005). Perner's theory is helped along by Searle's widely cited distinction between prior intention and intention-in-action. The notion of embedded reflection does not have to be a matter of prior intention, but neither is it reducible to intention-in-action if that is understood in terms of motor control, as in perceptual theory. Situated reflection contributes to the formation of what Pacherie (this volume) calls "present-directed intention," which initiates and sustains the action, and is distinct from either motor intentions and future-directed intentions.

In contrast to the position that I have just outlined, Daniel Dennett (2003) suggests that the processes that constitute free will need not be conscious and need not depend on conscious decision. Indeed, he considers it Cartesian to suggest that consciousness is necessary for free will (Dennett 2003: 242n3). The notion of a situated reflection, however, is not at all Cartesian, nor is it opposed to a properly conceived epiphenomenalism. The truth of epiphenomenalism is narrowly circumscribed. It pertains to some of the specifics of motor control. When epiphenomenalist claims are made in regard to the question of free will, however, it's a different matter, as I've tried to show in this paper.

I am not arguing here for a disembodied notion of free will, as something that occurs in a Cartesian mind, nor do I mean to imply that the non-conscious brain events that make up the elements of motor control are simply irrelevant to free will. Indeed, for two closely related reasons, such non-conscious embodied processes, including the kind of neurological events described by Libet, are essential to a free will that is specifically human. First, as I have suggested elsewhere (Gallagher 2005), non-conscious body-schematic mechanisms of motor control support intentional action and are structured and regulated by relevant intentional goals. Following Anscombe (1957), I would argue that these levels of operation are intentional, even if they are not intentional actions. All such relevant processes are structured and regulated by my intentional goals as much as they also limit and enable my action. When I decide to reach for the lizard all of the appropriate physical movements fall into place without my willing them to do so. These embodied mechanisms thus enable the exercise of free will. Second, precisely to the extent that we are not required to consciously deliberate about bodily movement or such things as autonomic processes, our deliberation can be directed at the more meaningful level of intentional action. Our possibilities for action are diminished to the extent that these supporting mechanisms fail. Nonetheless, proposals to answer the question of free will in terms of mind-body or mind-brain interaction are looking in the wrong place. The relevant interaction to consider is the interaction between a situated mind-body system and its physical-social environment, a level of interaction found in the collecting of lizards, the helping of friends, and in the variety of deliberate actions that we engage in everyday.

Thus, the exercise of free will should not be conceived as equivalent to those processes that contribute to motor control, or to something that is generated at a *purely* subpersonal level, or to something instantaneous, an event that takes place in a knife-edge moment located between being undecided and being decided. Free will involves temporally extended deliberative consciousness that is best described as a situated reflection. This doesn't mean that freely willed action is something that occurs in the head – whether that is conceived, following a long philosophical tradition, as in a mental space, or following a more recent neuroscientific conception, as in the brain. Nor is it accomplished

in a mindless way. Freely willed action is something accomplished in the world, in situations that motivate embedded reflection, and amongst the things that I reach for and the people that I affect.

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