

How Do I Move My Body?

Fred Vollmer

University of Bergen

What is it for *me to do* something is the question discussed in the present paper. It has been suggested that my doings are elicited by tryings, intentions, and other causal mechanisms. These theories do not offer any convincing analysis of what it is for me to act. Insight is sought by looking at some case studies involving temporary loss of the ability to move one's body. What the case studies show, I conclude, is that when I move my body in the normal way, I do not first have to do something else that causes my body to move. Normal actions are events bodily beings can generate spontaneously (directly). An essential condition for having this kind of control is inside (proprioceptive) awareness of the body. When inner awareness of the body is lost, control can be taken over by visual awareness. But then movement loses its spontaneous character and depends on planning and intense concentration. One can think of the self ("I") from which my actions flow, as the mental life to which they belong, or as the consciousness that controls them.

There are certain things I have *control* over — certain things *I can do*. I can *raise* my arm. That is, sometimes when my arm moves, *I have moved* it. And only when *I have moved* my arm, do the arm movements constitute an action. If, when I have won the race, someone else grips my hand and lifts my arm, without *me doing* anything, with *me* remaining passive, then the movements of my arm do not make up an action of mine. My actions are those activities which are under my control. And activities that are under my control, are activities that *I make* happen, things that *I do*. (Control also implies being able to refrain from doing things, and being able to adjust and stop actions one has initiated.)

But how do I do such a thing as raise my arm? How do *I make* the movements of my arm happen? What do I do when I *raise* my arm that I do not do when someone else lifts it?

According to Frankfurt (1978), whenever a person does something, he is "necessarily in touch with the movements of his body in a certain way" (p. 71) — implying that "the movements as they occur are under the person's guidance" (p. 72). In what way am I "in touch with" the movements of my body when I act? And what does "guidance" consist of? Frankfurt's claim is that whenever I do something like raise my arm, the movements of my body are controlled by a "causal mechanism," and the activity of such a mechanism "is . . . our guidance of our behaviour" (p. 75). Moreover, since we are aware of the operation of such mechanisms whenever we act, we identify with these mechanisms, experience them as us. As Frankfurt says, "our sense of our own agency when we act is nothing more than the way it feels to us when we are somehow in touch with the operation of mechanisms of this kind, by which our movements are guided and their course guaranteed" (p. 75).

Frankfurt's view, then, seems to be the following: when I *do* something (like raise my arm), a causal mechanism (inside me), which I am aware of and experience as "me," controls (starts, adjusts, stops) the movements of my body, which I am also aware of and experience as "mine." That is what *doing* consists of, what marks actions off from other events. When someone lifts my arm, the movement of my arm is caused by an external mechanism. When my pupil dilates, the muscular movements are caused by mechanisms which I am not aware of, and such movements, therefore, aren't my actions either.

Frankfurt is right in claiming that whenever I do something, I am in touch with the movements of my body in a special way. But I believe he is wrong in holding that whenever I act, my movements are guided by causal mechanisms which I am aware of and experience as me (guiding my actions). For both when I raise my arm and when my pupils dilate, the movements involved are caused by neural mechanisms. And, in both cases, the operation of such neural mechanisms is something I am totally unaware of. So, guidance by a causal mechanism the operation of which I am in touch with and experience as me, cannot be what *me doing* something consists of.

In Thalberg's (1984) view, what happens when I raise my arm is that, in advance, an *intention* to raise it (in a certain way, and at a certain time) is formed. This intention itself (without intervening links) then causes the arm to move and continuously regulates its movements until the intention is fulfilled. Thalberg argues that Frankfurt's idea of a bodily movement being guided by a person reduces to the notion of a movement being continuously caused by an intention: "My conjecture is that you keep in touch with the movements of your body, and have them *under your guidance* if your intention sustainingly brings them about" (p. 258). A similar theory has been presented by Bishop (1989) who claims that actions are "sensitively caused" by intentions.

The question is, when I raise my arm, *do I always intend to raise it?* Are all the movements I make continuously caused by intentions? I think not. Sometimes I do things (e.g., say things) spontaneously, without any preformed decision to act, and without any definite intention controlling the course of my action. What I do and say may sometimes surprise me. I may say and do things I didn't mean to do and say. Yet I may, in such circumstances, be completely in touch with the movements of my body and have them under my control. Or so it seems to me. And therefore I think the theory that actions are movements caused by intentions, i.e., that I raise my arm by intending it to move, is false.

Some authors, like Chisholm (1966, 1976), Hornsby (1980), and Smith (1988), believe that I do such a thing as raise my arm by trying, attempting, endeavoring or undertaking to make it move. Trying to make my arm move, according to Chisholm, is something distinct from just moving it. For I may try to raise my arm without succeeding. And trying does not "imply exertion, effort, or trial and error," says Chisholm (1966, p. 33). What is, then, *trying to move?*

Chisholm suggests that "our undertakings could be said to be changes in our brain" (1976, p. 210). Hornsby holds that "every action is an event of *trying* or attempting to act, and every attempt that is an action precedes and causes a contraction of muscles and a movement of the body" (1980, p. 23). And Smith (1988) claims "that the sending out of nerve impulses, whether or not followed by a movement of the agent's body, is an exercise of agency" (p. 408). According to this definition of trying, to say that I raise my arm by trying to make it move, means that the movements of my arm are caused by the sending out of nerve impulses. But how, then, can we distinguish cases of raising one's arm from cases of pupil dilatation? For pupil dilatation is also caused by the sending out of nerve impulses. Perhaps the patterns of neural processes that guide our actions are different from the ones that control reflexes. Yes, but why does the one set of neural processes constitute a case of *trying*, whereas the other does not?

There are two possible solutions. One is to accept that the neural processes guiding actions are different from the mechanisms that control reflexes, to admit that these differences do not make up a difference between trying and not trying, and to conclude that the concept of trying is superfluous and should be eliminated. The difference between actions and non-actions is a difference in patterns of neural events and nothing else. Such a solution of course offers no answer to the question of how I can *do* such a thing as raise my arm? For neither in the case of pupil dilatation nor in the case of raising my arm do I send out nerve impulses. I am totally unconscious of the activity of my nerves, and do not know which nerve impulses must be sent out to make my arm move when I want to raise it.

According to the second solution, the events that precede and guide actions have mental as well as physical aspects. That is, when I raise my arm, but not when my pupils dilate, there are mental processes going on in addition to neural ones. And that is why arm raising, but not pupil dilatation, is a case of trying. Trying is not *just* the sending out of nerve impulses — it is both a mental and a physical concept. It can be assumed, moreover, that the mental processes associated with tryings are processes that I can *make* happen, activities that I can *do*. And by (or in) making them happen, I can also (indirectly and unknowingly) make the neural processes involved in the causation of actions happen. But then we would still like to know just *what* it is that we do when we *try* to do something. If it is not making an effort, what is it? Is it, for example, *willing* to move? Or is it, as Davidson (1980) and Moya (1990) suggest, just moving, or starting to move?

The theories I have considered so far, then, do not seem to offer any convincing analysis of what it is for me to do something. So instead of discussing more theories, I shall now consider some case studies that may shed light on the question of how I move my body. The first of these cases is Oliver Sacks' autobiographical story of how he lost the ability to move a major part of his body and how he gradually regained control. This study is especially valuable since it describes the transition from abnormal to normal movement, and contains very vivid and detailed reports on how this process is experienced. I shall, therefore, present this case rather extensively. The three other cases all involve persons who, due to illness, have permanently lost the ability to move in a normal way. An understanding of how we normally move can be gained by considering such pathological cases. Also, they serve as a basis for testing some of the conclusions that the Sacks case seems to indicate.

On a walk in the mountains off the west coast of Norway, Sacks (1984) fell and injured his left leg. The quadriceps had been torn loose from the patella, and Sacks could no longer move the leg. In hospital, a while after the tendon had been successfully reconnected, Sacks decided to tense the quadriceps again. But with surprise he discovered that he had no control over the muscle. He experienced the same thing again in his first training session with a physiotherapist who, among other things, asked him to pull his knee-cap toward him. Sacks pulled and pulled till he was panting with exertion, but could not produce even the quiver of a movement. He then realized what the problem was. His efforts lacked a proper point of application. He had lost contact with his left leg. It felt dead to him and could therefore not be reached. In order to remember what it was like to have a leg, Sacks "tried with the right leg. No difficulty at all. Indeed I didn't *have* to 'try' or 'think'. No effort of willing or thinking was needed. The leg did everything naturally and easily" (p. 42).

This loss of contact with his leg was also manifested in an inability to feel its positions and passive movements. Thus, at one time the nurse found him asleep with his left leg half off the bed. On being awoken and informed of this, Sacks couldn't believe it. When he sat up and looked, he was astonished to see that his leg was not lying where he had assumed it to be. When the nurse had moved it back into bed, Sacks didn't notice this either, but kept on asking her to put the leg back into bed. Shocked by the realization that he was totally unaware (except by sight) of the positions of his leg, Sacks instructed the nurse to move his leg systematically in different directions. He discovered that he could feel nothing whatsoever of these passive movements. Proprioception was completely gone. The result of these experiences, in turn, was that Sacks could no longer feel the leg as part of himself. "It was absolutely *not-me*" (p. 48).¹

Ten days after the accident, life started coming back to Sacks' leg, sensorially and motorically at the same time in the form of flashes of pain and involuntary twitches. Though no voluntary movement was yet possible, Sacks experienced these flashes as the first sparks of life.

Then, several days later, when the cast had been removed from his leg, Sacks

had an odd impulse to flex my left leg, and in that self-same moment immediately did so! . . . There was no cogitation, no preparation, no deliberation, whatever; there was no "trying"; I had the impulse, flash-like — and flash-like I acted. The idea, the impulse, the action, were all one — I could not say which came first, they all came together. I suddenly "recollected" how to move the leg, and in the instant of recollection I actually did it . . . The knowing-what-to-do had no theoretical quality whatever — it was entirely practical, immediate — and compelling. And it came to me without the slightest premeditation or warning, without any calculation or contrivance on my part. Suddenly and spontaneously — out of the blue. (pp. 94–95)

In achieving this first contraction of the muscle, Sacks felt united with his leg again, reconnected. In contrast to the initial involuntary twitches, the new movements, according to Sacks, belonged to him, involved him, his mind as well as his body.

The awakening reached its climax when Sacks "remembered" how to walk. Initially this was done by planning each step in advance and then cautiously

¹Reflecting on the cause of this loss of a part of himself, Sacks wonders whether he has Pøtzl's syndrome. Patients with this syndrome, which is caused by damage in the posterior right hemisphere of the brain, no longer recognize their own arms or legs as parts of themselves. These body parts may be experienced as dead things, or as the limbs of someone else, which the patient refuses to use or move himself (though motorically nothing may be wrong). The patient may request that the strange limb be removed. Brain damage of the kind associated with Pøtzl's syndrome was, however, not the cause of Sacks' loss of his leg.

moving the leg the calculated distance. But then suddenly this artificial, disconnected way of moving was abandoned and Sacks found himself walking in the normal way, without having to think, plan or intend. The return of Sacks' ability to move spontaneously, moreover, was precisely consonant with the leg coming back to life, feeling real, belonging to him. Having reached this stage, walking was done "without any conscious thought or calculation, carried ahead by the feeling of it all. And it was this that was so different, so absolutely different, from the elaborate and exhausting computation before — the sense that everything had to be counted and worked out beforehand, . . . and that nothing could be simply, thoughtlessly, done" (p. 112).

In *The Man Who Mistook His Wife for a Hat* (1985), Sacks tells the story of a woman who suffered from "sensory neuritis, affecting the sensory roots of spinal and cranial nerves throughout the neuraxis" (p. 45). According to Sacks, what was unique about this case was that damage was done only to the proprioceptive fibres. That is, though her other senses were intact, this woman had lost all inside contact with her muscles, tendons and joints. In her own words, she felt completely "disembodied." She could not move in a normal fashion and looked "as floppy as a ragdoll, unable even to sit up" (p. 48). After an intensive training period, however, a considerable functional recovery took place. By using sight, hearing, and vestibular information, she learned how to walk and "to conduct the usual business of life — but only with the exercise of great vigilance, and strange ways of doing things — ways which might break down if her attention was diverted" (p. 49). But, in spite of this recovery, she continued to feel disembodied, unreal, depersonalised and dead, like the very centre of her had been scooped out.

Two cases quite similar to the "Disembodied Lady" are described by Cole and Paillard (1995). Due to viral infections I.W. and G.L. both "lost sensations of touch and muscular proprioception, I.W. from the collarline down, G.L. from a level at about the mouth" (p. 247). Motor fibres were not affected, and with training both G.L. and I.W. gained some control over their bodies. G.L. learned to use her arms in doing housework and cooking, but performed these tasks from a wheelchair. I.W. learned to stand and walk. Both relied on visual cues to guide their movements. They had to plan movements in advance and concentrate intensely on getting them done. In the dark, or if their bodies were covered by a blanket, they lost control. If distracted while walking, I.W. would collapse. The concentration and effort involved in walking left I.W. completely exhausted at the end of the day. Neither I.W. nor G.L. moved in a normal way. Thus, I.W. "advanced like a wooden puppet activated by a novice, and in a way that's exactly what he was" (Cole, 1991, pp. 61–62). How G.L. and I.W. experienced their bodies

when inside awareness was gone, is not well documented. But G.L. talked of her body as a machine on which she imposed commands, and I.W., in the first weeks of his deafferentiation, described his existence as a living death. How I.W. experienced his body after he had learned to walk is uncertain. But, at the very end of the case study (Cole, 1991, p. 180), I.W. says that in spite of all that he has achieved, he still feels trapped in his body.

Let me now try to sum up what these case studies seem to imply regarding the question of what it is for me to do something. What Sacks' experiences show is that when I move my body in the normal way, I do not first have to do something else that causes my body to move. The movements occur spontaneously — uncaused. There is no trying, intending, or willing. Doing is just doing. As Sacks says, "In the beginning is the deed and there is no path to doing, no way of doing, other than doing" (1984, p. 107). The proper answer to the question of how I do such a thing as raise my arm, therefore, is to do what one is asked to explain. For there is nothing more to explain. Knowing what doing is, is knowing how to move spontaneously, and that is something practical, something primitive, that has to be experienced.

What the case study also reveals, however, is that the ability to move spontaneously involves an inside awareness of the body. As documented in all four cases, when this awareness is gone, spontaneous movement is gone too. And when normal, spontaneous movement comes back, as it did in Sacks' case, it comes back together with this special kind of body consciousness, which then carries movement ahead "by the feeling of it all."

The term "inside awareness" was used by Mackie (1976) to denote the immediate, introspective awareness each individual has of (some of) her own, and only her own, mental processes. The idea of an inner, private awareness of self has appeared questionable to many (see Natsoulas, 1985), since it seems to presuppose some mysterious faculty of inner observation. But no mystery surrounds the idea of an inside (or inner) awareness of the body and spontaneous movement. For it is a physiological fact that normally each individual receives direct information from sense organs (proprioceptors) within her own muscles, tendons and joints, providing her with an experience of her body that is literally from the inside, and that is exclusive to her (i.e., subjective) since each individual is proprioceptively connected to the inside of only one body, namely her own.

It is important to point out that when inside awareness is gone, it is still possible to move intentionally. But such movement is not spontaneous. It requires planning, effort, and intense concentration. It is not normal movement, but jerky, artificial, machinelike. And it is controlled by visual observation of the body.

Inside (proprioceptive) contact with the body, and the kind of control which such awareness makes possible, also seems to be the basis for experi-

encing the body as *mine*, as part of *me*. As Sacks said, the leg that he could see, but no longer feel (and no longer move), no longer felt "as 'mine', as part of me. It seemed to bear no relation whatever to me. It was absolutely *not-me*" (1984, p. 48). The Disembodied Lady, even after she had learned to walk, experienced her whole body in a similar way, as being dead and depersonalised. She felt that she had lost the very center of her self. As already mentioned, how G.L. and I.W. experienced their bodies after they lost proprioception, is somewhat uncertain. Describing the body as a machine, or as something in which one is trapped, however, does seem to indicate some degree of experienced estrangement and loss of a part of the self. On the other hand, in spite of his severe handicap, I.W. learned to walk, became independent, got a job, married, took pleasure in life, and looked forward to the future. It is hard to believe that such a person feels dead, or that he no longer has the experience of being a self or person. While continuous inside awareness of the body is a basic and important source of self experience (see Stern, 1985; Winnicott, 1949), it is not the only source. I.W., after all, could still think and talk, and experience and control these activities from the inside. In contrast to G.L. and the Disembodied Lady, I.W. also had proprioceptive contact with his neck muscles.

To hold that there are certain things I can do, however, not only raises questions regarding what I do when I move my body: the claim also raises questions about the nature of the "I" or self from which my actions are assumed to flow. Taylor (1963) used the term "agent causality" to denote the relation between an "I" and his actions, and thought that attributing actions to selves involved the idea of an inner *substance* as the origin of action (see also Chisholm, 1966, 1981). But nowhere in Sacks' detailed description of his experience of moving is there any mention of an inner substance. And many other authors since Hume have, on the basis of self observation, denied the existence of such an inner, substantival self (e.g., James, 1890; Mackie, 1976; Nagel, 1986; Parfit, 1984). Parfit thus claims that "I do not believe that I am directly aware that I am such an entity. And I assume that I am not unusual. I believe that no one is directly aware of such a fact" (p. 223). I shall accept this tradition and assume that the self is not a substance in addition to the body. What, then, can it mean to say that "I did it"?

One can think of an individual self (an "I") as a mental life (Parfit, 1984), a continuous stream of mental and physical activity, which belongs to, and is experienced from the inside (as "mine") by, a particular bodily being. In accord with this assumption, "I did it" may simply be telling which mental life some action belongs to, is part of, stems from. In confessing that I killed X, I state that the killing of X is one of the activities of the mental life of *this* bodily being — the one who is now speaking. It involved, was performed by,

the hands, legs, voice and inner (and outer) awareness of me, the bodily being who is uttering the confession.

But, one may wonder, is this all we mean (or can mean) when we say "I did it" — that action A belongs to *this* particular mental life? Don't we have the feeling that "I" means something more than a collection of activities? Isn't "I" the something that *controls* the activities, is responsible for their happening, and binds them together? Well, if that is what we are looking for, as the referent of "I," the something that ultimately controls the spontaneous movements of my body, the essential condition of their happening, then we already know what that something is. For we previously concluded, on the basis of the case studies, that the essential psychological condition (there are of course physical conditions as well) of being able to move spontaneously, is that one is aware of one's body from the inside. In pathological cases, when proprioceptive contact with the body is disturbed, control can be taken over by visual awareness.

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