

PHILOSOPHICAL EXPLORATIONS

On the self-ascription of deafferented bodily action

Víctor M. Verdejo

Department of Humanities, Pompeu Fabra University, Barcelona, Spain

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ABSTRACT

Subjects suffering from extreme peripheral deafferentation can recruit vision to perform a significant range of basic physical actions with limbs they can't proprioceptively feel. Self-ascriptions of deafferented action – just as deafferented action itself – fundamentally depend, therefore, on visual information of limb position and movement. But what's the significance of this result for the concept of self patently at work in these self-ascriptions? In this paper, I argue that these cases show that bodily awareness grounding employment of the self-concept in self-ascriptions of action can be fundamentally third-personal and concern a body that is not presented as one's own, but as an object among others.

Introduction

Peripheral deafferentation is a rare neuropathy that severely affects proprioceptive capacities. In extreme cases, subjects lack total proprioceptive and tactile feedback from the nose or the neck down. Even in such cases, however, deafferented subjects can recruit visual information to perform a significant range of basic physical actions with limbs they can't proprioceptively feel. There is little doubt that these subjects can also self-ascribe the actions they can carry out. Self-ascriptions of deafferented action – just as deafferented action itself – fundamentally depend, therefore, on visual information of limb position and movement. But what's the philosophical significance of this result for the concept of self patently at work in such cases? In this paper, I will argue that bodily awareness grounding employment of the self-concept in the self-ascription of deafferented action is fundamentally third-personal: it is awareness of a body that is not presented as one's own, but as an object among others. To this purpose, I will draw on what we may call 'multi-perspective' accounts. These independently developed accounts recognise the existence of various perspectives, ways of

thinking or exercising capacities possibly exploited in employments of the self-concept (Bermúdez [2017](#); Longworth [2013](#); Ludlow [2019](#); Rödl [2007](#); Skiba [2017](#); Verdejo [2018](#), [2021a](#), [2021b](#)). For this reason, I attempt to show here, they provide the most natural explanation of how deafferented subjects employ the self-concept in action self-ascription. This proposal brings out the multiple ways in which employments of the self-concept can be grounded in our experience of the body. If correct, however, it calls for a revision of a mainstream family of 'sole-object' views. According to these views, candidate sources of bodily awareness sustaining self-awareness (as opposed to mere body-awareness) are necessarily first-personal or 'from the inside' and must present the subject's body as its sole, proprietary object (Ayers [1991](#), Part III, Chap. 25; Brewer [1995](#); Cassam [1995](#), [1997](#), Chap. 2, [2011](#); Evans [1982](#), Chap. 7; Martin [1993](#), [1995](#), [1997](#)). Consequently, these views suggest, bodily awareness of an object grounding employment of the selfconcept in action self-ascription must itself be necessarily first-personal and present the subject's body as its sole, proprietary object.¹

As we shall see, sole-object approaches are deeply rooted in both the phenomenology and the epistemology of bodily experience. However, by limiting the bodily perspectives sustaining self-thought, I will suggest, they also fail to fully capture the complex bodily ties engaged in self-ascriptions of deafferented action.

This article is structured as follows. In Section 2, I will spell out the way in which deafferented subjects self-ascribe their basic physical actions and motivate the claim that such self-ascriptions are fundamentally (if perhaps not entirely) grounded in third-personal, visual awareness of their own bodies. In Section 3, I will outline the connection between the fundamental use of third-personal awareness in self-ascriptions of action and the concept of self. I will suggest, more precisely, that the self-ascription of deafferented action is better explained by accounts that make room for employments of the selfconcept from more than one perspective or way of thinking. I will also point out the ways in which this suggestion involves a reassessment of sole-object views. Section 4 discusses two lines of objection to the analysis advanced here. The first line of objection takes selfascriptions of action by deafferented subjects to involve a spurious self-concept, one that doesn't properly qualify as a kind of thinking of oneself as oneself. The second line of objection accepts that the self-concept in question is genuine but then insists that, contrary to appearances, it is not fundamentally grounded in third-personal bodily awareness. I will argue that both lines of objection lead, respectively, to untenable claims about the self-ascriptions, and the contrast between firstand third-personal bodily awareness. A brief summary of the main points and suggestions for future research will close the paper.

Deafferented self-ascription of action

Peripheral deafferentation is caused by the destruction of the afferent nerves carrying information about the movement and posture of one's body from receptors in joints, tendons, skin and muscles. In the most extreme cases – such as those extensively documented for IW and GL – subjects completely lack proprioceptive feedback and touch below the cervical region. Here I will focus exclusively on these extreme cases of deafferentation. Even in such cases, subjects can compensate for their proprioceptive deficit by recruiting visual information of their limbs and body (Cole [1991](#), [2016](#); Cole and Paillard [1995](#); Ingram et al. [2000](#)). With enough time, these subjects can regain a capacity to perform basic physical actions (e.g. raising, grabbing, pointing) and even a wealth of more complex ordinary actions characteristic of a normal life (e.g. dressing, walking, feeding) with parts of their bodies they can't proprioceptively feel.

Deafferentation is both clinically exceptional and philosophically intriguing in various ways. It is no wonder that it has featured in central discussions of the bodily self over the years. For instance, one lesson to draw from these cases concerns the kind of phenomenology or experience necessary for action. In particular, they arguably show that, pace Brian O'Shaughnessy ([1980](#), [1989](#), [1995](#)), proprioception of one's body is not a necessary condition for action with it (Wong [2015](#), [2016](#), [2018](#); Howe [2018](#)). The cases also have a bearing on the kind of information or representation exploited in action. In this regard, it has been observed that deafferented patients illustrate the absence of the kind of representation characteristically responsible for action and motor control (often referred to as 'the body schema') (Gallagher [2005](#); Gallagher and Cole [1995](#); Paillard [1999](#)). Others have emphasised, by contrast, that the cases bring out the multimodal character of such representations (Vignemont [2016](#); Wong [2014](#), [2017](#)).

The philosophical significance of deafferentation doesn't stop at the level of either bodily awareness or body representation. In this paper, I set out to explore, more precisely, its impact on our understanding of the concept of self (or self-concept) patently at work in action self-ascription. But why, one may well wonder, should we think that deafferentation is relevant in precisely this connection?

As we have just seen, severely deafferented subjects can recover many of their basic action capacities. Yet these subjects are also undeniably capable of self-ascribing the actions they can perform.² To keep the discussion focused, I will here confine attention to self-ascription of basic, physical actions expressible with sentences of the form 'I am ϕ -ing' such as 'I am raising the arm'³ or 'I am grabbing the cup'. There are at least two central philosophical issues one may pursue in relation to the self-ascription of such actions. The first has to do with knowledge. The kind of self-ascription under consideration here will in many instances plausibly involve a central form of self-knowledge, namely, knowledge of one's own actions. Although I will not argue the point presently, deafferented

patients are presumably not merely capable of self-ascribing, say, episodic 'raising-arm' or 'grabbing'-actions but, moreover, may also know that these are actions they are carrying out at a particular moment.⁴ Here, I will be concerned with a second, more basic issue: the very employment or use of the concept of self. The kind of self-ascriptions we are considering *prima facie* involve the employment of this concept, namely, the concept associated with the first person pronoun 'I' in the subject position of the target self-ascriptions (*viz.* 'I am ϕ -ing'). In general, it seems correct to suppose that a capacity to self-ascribe F is precisely a manifestation of a capacity to employ the self-concept in relation to F. Importantly, the self-concept, as typically expressed with uses of the first person pronoun, must be sharply distinguished from other concepts which may also be used to think of a self and are expressible by other means, such as demonstratives (e.g. 'this/that person'), definite descriptions (e.g. 'the man who lost his body') or proper names (e.g. 'Ian' or 'Ginette'). As it is often put, the concept of self, unlike other concepts also used to think of a self, characteristically involves thinking of a self as oneself (e.g. Cassam [1997](#), Chap. 1; Guillot [2016](#); Longworth [2013](#); Martin [1997](#), 119–124).

What does self-ascription of deafferented action show then from the point of view of the understanding of the concept of self? In this paper, I shall argue that what self-ascription of deafferented action shows in this context is that employment of such a concept by a given subject can, at least some times, be fundamentally grounded in awareness that presents the subject's body as an object among others. In a way I purport to clarify in this section, this awareness is characteristically third-personal.

The notion of 'fundamental ground' is here a restrictedly counterfactual notion. The claim is that if these subjects, given their condition, were to lack visual, third-personal access to their bodies, they would *eo ipso* lack the capacity to employ the self-concept to justifiably self-ascribe a given action, and indeed, the capacity to carry it out.

This claim might seem puzzling. Can our understanding of the concept of self really make room for such fundamental dependence on third-personal awareness? In the next section, I will discuss a class of accounts that allow to answer this question in the positive. As previously noted, however, this answer is contentious in that it would lead to a critical revision of sole-object views, *i.e.* views for which bodily awareness grounding employment of the self-concept necessarily presents the body as its only source. Before we delve into this controversy, however, it is vital to spell out in more detail the nature of the target self-ascriptions.

As mentioned above, I will confine attention to basic physical actions such as raising the arm or grabbing a cup. The actions are basic in relation to more complex bodily actions (such as walking, driving or dancing) or temporally extended actions (such as going to work or cleaning the house). The actions are physical in that they are carried out

by physical means and involve no sophisticated level of intellectual achievement (by contrast to, say, reading a map or making a mathematical calculation). As these remarks anticipate, actions are considered here at the level of a temporally constrained token. Nonetheless, nothing prevents speaking of the token actions in question (reaching at t , grabbing at t ...) as belonging to an action type (reaching-type, grabbing-type ...) that is repeatable by the same or distinct subjects across time.

Now, self-ascriptions of action requires, rather obviously, a capacity to execute them. Importantly, deafferented patients can master basic physical actions in much the way subjects with normal proprioception do (Howe [2018](#), 66–67; Vignemont [2018](#), 147–149). What is remarkably different, nonetheless, is the cognitive implementation of the action. Crucially, deafferented subjects need continuous visual feedback from the body limbs they use as effectors, both at the start and during the execution of the action. This is so even when the action capacity has achieved a high level of automatised. This reflects a capital difference in the way action is experienced. Normally afferented people experience their actions first-personally or ‘from the inside’. By contrast, deafferented action is experienced ‘as a pilot in a ship’ or as ‘remote control’ (Brewer [1995](#), 302; Wong [2018](#)). Commenting on IW’s case, Wong puts the point thus: IW is like a pilot in his body vessel. Whilst his body remains the unique and immediate respondent of his motor commands, he acts using conscious visual control. His way of acting with his body is thus quite unlike ours. In this way his intending to act with his limb is based on visual attention, which does not intrinsically distinguish between his body as opposed to other bodies and objects. All visible objects can be objects of visual attention. There is a sense in which his body is like an external object, just that he has efferent connections to it and thus can operate it under conscious attentional control. In contrast, fluid everyday action for afferented agents doesn’t require them to target the bodily effector and consciously attend to it while acting. Thus, in this sense, for afferented agents, acting with their bodies is not like a form of remote control whilst it is for IW. (Wong [2018](#), 592) While our focus here is on experience of bodily action, the point of course carries over to the general awareness deafferented people have of their acting bodies. As José Luis Bermúdez notes: The moment-to-moment information about their bodies that deafferented patients possess is almost exclusively derived from vision. Their awareness of their own body is continuous with their experience of the extrabodily world. They are aware of their bodies only from the same third-person perspective that they have on nonbodily physical objects. [...] this is not at all the way in which we experience our bodies from a first-person perspective. (Bermúdez [2005](#), 145, emphasis in original; see also Brewer [1995](#), 300–303) As Bermúdez’s remarks already suggest, the contrast between the experience of deafferented and non-deafferented awareness is plausibly underpinned by distinct sources of

body-relative information (Wong [2015](#), [2018](#); see also Bermúdez [2011](#), [2017](#)). We may thus suppose that when action is experienced from the inside, it is experienced by recourse to bodily information that is distinctive of the acting body. It is information that presents the body as its sole, proprietary object. As is often remarked, bodily information or awareness presenting the body as its sole object is indeed compatible with, and perhaps inherently tied to, it also presenting the body as an object whose material or spatial properties entail the presence of other objects (e.g. Brewer [1995](#), 305–306; Cassam [1995](#); Martin [1993](#); Martin [1995](#), 279–280; Martin [1997](#), 125–126). However, when action is experienced as remote control, the subject's body is characteristically brought to a common level with other objects of awareness. The experience is the result of recruiting information that presents the body as a physical object among a multitude of other physical objects also detached from or external to the subject.⁵

We are now in a position to make precise the idea that self-ascriptions of deafferented action is fundamentally grounded in third-personal awareness. Severely deafferented subjects lack proprioception or touch below the neck. The kind of deafferented action under scrutiny takes place therefore in the total absence of proprioceptive feedback from the relevant body part (viz. an arm, a hand, a leg, a foot). It follows that the fundamental awareness in which to ground the self-ascription of the action must be visual. And visual awareness of the deafferented acting body is fundamentally third-personal in the following sense: it is awareness of a body that is not presented 'from the inside' or as one's own, but rather presented with a distinctive 'remote control' phenomenology as an object among others. Deafferented subjects are visually aware of an acting body that happens to be their own but is not presented as their own. We have therefore all the elements to conclude that self-ascription of physical basic action in deafferented subjects is fundamentally grounded in third-personal bodily awareness, namely, the kind of awareness made available via visual information of the relevant body part.

Two caveats are important at this point. Note first that the claim that deafferented action self-ascription is fundamentally grounded in third-personal, visual awareness doesn't in and of itself support the view that there is no first-personal, proprioceptive information conceivably at work in the self-ascription. For instance, one may take proprioception of at least part of the body – such as the head or neck – to be needed also in deafferented cases. To my knowledge, clinical studies don't allow us to rule out this possibility. However, even if this were the case, proprioceptive information will still patently not play the fundamental role that visual information plays in the kind of self-ascription under analysis. To see this, take for instance a 'raising-arm' token action. It would seem just correct to suppose that in order to self-ascribe a 'raising-arm' token action, information about the arm is fundamental in a way that

information about other parts of the body is not. However, we know that, for deafferented subjects, to lose visual feedback from their arm's posture and motion is on a par with losing the capacity to perform the action and hence to self-ascribe it. It is in this sense that third-personal, visual awareness is a fundamental ground for the self-ascription of deafferented 'raising-arm' action. Proprioceptive information for deafferented subjects would concern, even if effectively engaged, parts of the body other than the arm and, to that extent at least, clearly not be fundamental in this sense.

The second caveat is about scope. The claim I am setting forth is about specific employments of the self-concept and doesn't concern normal conditions. We may agree that, for proprioceptively normal subjects, third-personal awareness is not the fundamental ground for the self-ascription of a basic physical action. More generally, the claim that self-ascription of deafferented action is fundamentally grounded in third-personal awareness is neutral about the phylogenesis and ontogenesis of a capacity to self-ascribe action. It might be true that we couldn't find organisms capable of self-ascribing action with a limb without a genetically evolved or developmentally required capacity to being proprioceptively aware of that limb. All the same, for the particular and temporally constrained exercises of such a capacity under consideration, it is still the case that the fundamental ground on which self-ascription depends consists of third-personal, visual awareness of limb location and arrangement.

A multi-perspectival self-concept

So far I have been concerned with making clear and motivating the claim that deafferented subjects can self-ascribe basic physical actions and do so fundamentally on the grounds of third-personal, visual awareness of the body. How is this result supposed to affect our understanding of the self-concept? A natural suggestion to explore is that employments of the self-concept involved in such self-ascriptions – the concept associated with uses of the first person pronoun in expressions of the form 'I am ϕ -ing' – must themselves be fundamentally grounded in third-personal bodily awareness. This is a natural suggestion to make if we assume, as seems reasonable, that self-ascriptions of action capacities are themselves manifestations of capacities for the employment of the self-concept. In this section, I will draw on an independently developed account of the self-concept – the multi-perspective account – to substantiate this suggestion and to offer, in fact, what I take to be the best explanation of the cases at hand. In the next section, I will address the objections to this suggestion.

Several authors have posited a number of perspectives, ways of thinking or exercising capacities in the elucidation of the concept of self.⁶ These views are often motivated by reflection on the requirements of communication and shareability of thoughts expressible with the first

person. Suppose, to use a variation of Frege's celebrated example (cf. Frege [1956](#), 297–298), that Dr Lauben sincerely utters 'I've been wounded' and you happen to agree with him. On a conception of communication in terms of thought-sharing, for Dr Lauben and you to genuinely agree on this matter is for you to share a (belief-attitude towards a) particular thought, namely, the thought that Dr Lauben himself has been wounded. However, you can't really think that thought from the first person perspective. As Frege observed, '... everyone is presented to himself in a particular and primitive way, in which he is presented to no-one else. So, when Dr Lauben thinks that he has been wounded, he will probably take as a basis this primitive way in which he is presented to himself. And only Dr Lauben himself can grasp thoughts determined in this way' (Frege [1956](#), 298). The key point survives even if we endorse a notion of first-person perspective – such as a belief state or role in Perry's terminology (Perry [1977](#), [1979](#)) – that is not proprietary to a subject. In particular, even if Dr Lauben and you can have thoughts by recourse to the same first-person perspective (or belief state), from that perspective you could only think the thought that you yourself have been wounded – which is obviously distinct to the thought expressed by Dr Lauben. Thus, if you are really to share the thought Dr Lauben expresses with his utterance of 'I've been wounded', it must be possible for you to think it on a different basis. This is where other perspectives kick in. In order to agree with him, you would need to employ the self-concept that Dr Lauben employs, but do so by recourse to a perspective different from the first-person perspective. For this reason, these authors have suggested, the self-concept must be such that it makes space for different perspectives, ways of thinking or exercising capacities possibly at work in its instantiation – when e.g. different subjects agree on a given self-thought (Bermúdez [2017](#); Longworth [2013](#); Ludlow [2019](#); Rödl [2007](#)).

Agreement is not the only phenomenon fuelling multi-perspective accounts. Disagreement, testimony, and compositionality are other important sources. If you were to disagree with Dr Lauben by having the thought you would express with an utterance of 'You haven't been wounded', this would seem to require thought sharing involving more than one perspective in just the way agreement does (Bermúdez [2017](#), 72–75; Verdejo [2018](#), [2021a](#)). Similar considerations hold if you were to acquire knowledge by means of Dr Lauben's remark to the effect that he himself has been wounded. To suppose that you have acquired knowledge of Dr Lauben's thought by means of the report, is to suppose, inter alia, that you are able to think it (Bermúdez [2017](#), 75–78). Compositionality, finally, is also one possible reason that backs the multi-perspective approach. If Dr Lauben's thought were only thinkable from Dr Lauben's first-person perspective, then the compositional combination of that thought with the thought that you yourself have been wounded – expressible through your use of the first person – would seem to yield an

unthinkable thought: a thought thinkable by recourse to only your and by recourse to only Dr Lauben's first-person perspective (Künne [1997](#), 58; Skiba [2017](#)). To avoid unthinkable thoughts of this sort it seems again reasonable to take Dr Lauben's thought to be thinkable from perspectives other than the first-person perspective.

These considerations strongly suggest, in short, that it must be quite generally possible for subjects to think the thought one would express with 'I am F' from perspectives, ways of thinking or thought capacities other than the first person. I shall not attempt to defend the multi-perspective account here. [7](#) Instead, I will defend the particular application of the account to deafferented subjects. What matters for present purposes is that, on the assumption that the multi-perspective account is roughly correct, we seem to have at our disposal a straightforward explanation of employments or instantiations of the self-concept in self-ascription of deafferented action. On the view that suggests itself, employments of the self-concept in such cases would themselves be fundamentally grounded in third-personal awareness because they will be employments of the self-concept fundamentally from a third-person perspective. The third-person perspective would be made available, in particular, via visual awareness of the subject's acting body.

There are, however, two aspects of this suggested application of the multi-perspective account that bear emphasis. First, what is essential to the multi-perspective account as considered here is a claim at the level of thought, namely, the claim that thinkers possess a general capacity to employ a self-concept – and to think the corresponding self-thought – from different perspectives. In the case at hand, the key idea is that for any self-concept referring to x , any thinker y can employ that self-concept from a third-person perspective. Second, and in harmony with this first point, while employments of the same self-concept referring to a subject x by recourse to different perspectives might – in e.g. the communicative scenarios mentioned above – involve more than one thinker and different pronouns uttered by them (viz. 'I' and 'he/she'), there is nothing in the picture to suggest that this is a necessary condition for employments of the self-concept from more than one perspective. In particular, it is not a requirement for employments of a self-concept referring to x from the third person perspective by a thinker y that $x \neq y$ or that thoughts containing that self-concept be expressed with the utterance of a third person pronoun.

In short, nothing prevents us from extending the picture to cover cases of deafferentation in which, by uttering the first person pronoun 'I', a subject x employs a self-concept referring to x from the third person perspective. [8](#)

Interestingly, on this approach, employments of the self-concept from the third person perspective by deafferented subjects would often be inferentially combined with employments of the self-concept from the first

person perspective in such a way that these subjects would know that employments of the self-concept from these different perspectives co-refer (I will come back to this point in Section 4(i) below). But note that this is not a departure from the intersubjective cases invoked above: in normal circumstances, both Dr Lauben and his interlocutors can be said to know that employments of the self-concept from their different perspectives are co-referential.

Now, even if nicely fitting the multiple-perspective analysis, the idea that self-ascriptions of deafferented action involve the employment of the self-concept from a thirdperson perspective might be met with hesitation. It would suggest, first, that employments of the self-concept – exercises of the capacity to think of a self as oneself – can be fundamentally grounded in third-personal bodily awareness presenting one's body not as one's own, but as an object among others. Second, since this is, very clearly, bodily awareness that is not distinctive of any one particular self, the self-concept, so understood, could in principle be employable on visual grounds that are also accessible to subjects other than oneself. Both claims seem to go against an influential tradition of accounts of the relation between bodily awareness and the concept of self. According to these accounts, the concept of self – and self-awareness more generally – is to be, if at all, fundamentally grounded necessarily in bodily awareness that guarantees that only one body (one's own!) is actually presented. M.G.F. Martin offers a particularly relevant statement of this suggestion when discussing 'the link between concept of self and self-ascription of properties in making first-person judgements' (Martin [1997](#), 120). According to Martin, 'the only way in which perceptual awareness of an object could ground first-person judgements [as in e.g. action self-ascription] about the object of awareness would be if there were a way of being presented in experience such that the only object that could be so presented to a given subject would be the subject herself' (Martin [1997](#), 122). On this view, bodily awareness may ground self-ascriptions of action, if at all, only on the assumption that it is 'awareness for each subject of just one object, his or her own body' (Martin [1997](#), 125). In general, it seems fair to regard these accounts as centrally motivated to counter 'the common idea that our conception of ourselves 'from the first-person perspective' is a conception of a thinking, feeling, and perceiving thing, and not necessarily of a physical thing located in space' (Evans [1982](#), 224). This line will naturally seek to show that self-conscious uses of the first person may involve thinking of a self as the bearer of physical properties that – just as in the case of mental properties – are accessed 'from the first-person perspective'. From this angle, it is also natural to require that bodily awareness grounding employment of the self-concept must present the body as its unique object.

A detailed discussion of these rich views and their portrayals of bodily awareness can't be afforded in these pages. I think, moreover, that most of the insights these views provide will stand regardless of the present

considerations.⁹ Nonetheless, if the multi-perspective approach to the self-ascription of deafferented action is indeed correct, soleobject views would fail to capture some of the fundamental bodily links between one's body and the self. To demonstrate this, however, we need to address the battery of arguments that these theorists – and indeed others – may adduce in order to reject the here recommended analysis. I undertake this task in the next section.

Objections

Various objections may be raised against the account outlined in these pages. If sound, they would support the idea that only sole-object views are ready to offer the right sort of bodily grounds for the employment of the self-concept in bodily self-ascriptions. These objections are of roughly two types. Objections of the first type would agree that deafferented self-ascriptions involve a self-referring concept that is fundamentally grounded in third-personal, visual awareness but would take this concept to be, at most, a spurious self-concept, a concept that can't reflect a genuine capacity to think of a self as oneself. Objections of the second type are ready to countenance the genuine character of employments of the self-concept in the self-ascription of deafferented action, but would otherwise deny that such employments are fundamentally grounded in third-personal awareness. I discuss each type in turn.

No genuine self-concept

One may thus suggest that the kind of concept employed by deafferented subjects in selfascriptions of basic physical action is not a genuine self-concept but a *sui generis* or spurious self-concept. Even if having the surface appearance of a self-concept expressible with uses of the first person pronoun 'I' in self-ascriptions of the form 'I am ϕ -ing', the suggestion would go, the concept thereby expressed should be counted as a distinctively third-personal concept – equivalent to the concept expressible via 'this person', 'this body's owner' or perhaps a proper name such as 'Ian' or 'Ginette'.

I don't think this suggestion withstands close scrutiny. Note, to begin with, that selfascriptions of action of the sort we are considering are clearly apt to figure in inferences with incontrovertible uses of the self-concept. For instance, from 'I am raising the arm' and 'I think' – as uttered by a deafferented patient – it would seem to unproblematically follow that 'I am raising the arm and think' – as uttered by the same patient.

Similarly unproblematic are the inferences deafferented subjects could make from 'I am raising the arm' to 'I am an agent', 'I can move the arm', 'I am an extended thing', and so on.

Basic inferential capacities that unproblematically involve the genuine self-concept are not the only reason to be sceptical about this line of reply. Another important reason is that, if 'I am ϕ -ing' in the mouth of

deafferented subjects should be interpreted as, say, 'This person is ϕ -ing' or 'This body's owner is ϕ -ing' then it should be possible for such a subject to encounter a Frege case in which they judge 'I am ϕ -ing' and it could still turn out to be informative that they themselves are ϕ -ing. This seems to simply get wrong the cognitive structure of the self-ascription. Nothing indicates that these subjects would ever fail to appreciate that, having self-ascribed a particular action, it is themselves they are self-ascribing it to.

There are other problems. The idea that 'I' in the target self-ascription expresses a concept other than the self-concept will entail that there is a substantive difference to be traced between the concept deafferented subjects employ for self-ascribing basic physical actions and the self-concept they themselves might employ involving, for instance, mental actions (e.g. making a decision, judging, imagining). This would exacerbate, for deafferented subjects, the unwelcome Cartesian division between self-ascription of physical and mental properties (cf. Evans [1982](#), 221–222; Brewer [1995](#), 295–297; Morgan [2019](#)).

Even if persuaded by these considerations, the proponent of the multi-perspective account must be ready to face criticism stemming from reflection on the way the self-concept expressible with 'I' is widely taken to refer to a self. Genuine instantiations of the self-concept, many think, are such that they (a) guarantee reference to a particular self (e.g. Anscombe [1975](#), 54–55; Martin [1995](#), 282–283; Martin [1997](#), 121) and (b) feature in self-ascriptions that are immune to error through misidentification relative to the first person pronoun (IEM hereafter) (Shoemaker [1968](#)). The former stands for the fact that (non-recorded) uses of 'I' always refer to the utterer. The latter means that, when appropriately grounded, self-ascriptions of the form 'I am F' can be wrong about the ascription of F to a subject but never wrong about who the subject of the ascription is. But then, the objector would press, how could the employment of a self-concept fundamentally grounded in third-personal bodily information meet these two desiderata? This difficulty would seem thus to reinvigorate the idea that only a fake self-concept is involved in the self-ascription of deafferented action.

The difficulty is however far from conclusive. As for (a), there is no obvious reason to deny that employments of the self-concept by deafferented subjects don't have a guaranteed reference to a self in the most demanding sense of that condition. Any utterance of 'I' by a deafferented subject S would seem to necessarily refer, and necessarily refer to S. There is thus no obvious difference between a deafferented subject's use of 'I' in a self-ascription of action and anybody else's on this score.

Things get probably thornier in regard to (b). Arguably, third-personal, visual awareness of the sort deafferented patients mobilise in the self-ascriptions are not an appropriate ground to yield IEM. Two things can be said in reaction to this. First, it must be noted that it doesn't seem

controversial to suppose that not all uses of the self-concept are immune to error through misidentification relative to the first-person pronoun. This much is evident from explicit relativisations of IEM to a basis or a way of gaining knowledge (Cassam [1997](#), 61–68; Evans [1982](#), 218–219; see also Pryor [1999](#)). In fact, this feature of IEM has itself been taken to support the multi-perspective account of the self-concept (Verdejo [2021b](#)). Nothing therefore prevents us from taking the self-ascription of deafferented action to be based on grounds that are not appropriate to sustain IEM. To dismiss as fake an employment of the self-concept on the basis of its lack of immunity to error through misidentification seems thus unwarranted. Second, it is however a live possibility that self-ascriptions of action by deafferented people do have the IEM property after all. It has been independently argued that vision contains self-specific information that may provide grounds for judgments that are immune to error through misidentification (Evans [1982](#), Chap. 7; Cassam [1995](#), [1997](#), Chap. 2; Bermúdez 1998; Vignemont [2018](#), Chap. 3).¹⁰ If correct, a subject's employment of the self-concept in the self-ascription of deafferented action can exhibit the IEM property. These points show, in short, that there is no straightforward argument from guaranteed self-reference or IEM to the rejection of the multi-perspective account as applied to cases of deafferentation.

Some may suggest, finally, that the bodily ties to the self must necessarily be grounded in a particular phenomenology that guarantees awareness that one's own body is the source of the experience. For example, one may suggest that employments of the selfconcept grounded in bodily information require the phenomenology of being a spatially bounded creature (cf. Brewer [1995](#); Martin [1993](#), [1995](#), [1997](#)). If correct, and since deafferented subjects lack the appropriate phenomenology, such a view would clearly deem employments of the self-concept fundamentally grounded in visual awareness fake or spurious. I don't think, however, that this phenomenological constitutive tie between the body and the self-concept is mandatory. In fact, deafferentation would seem to offer a counterexample to it quite aside the multi-perspective account. The reason is that, plausibly, any candidate phenomenology grounding employment of the selfconcept in self-ascriptions must in particular be apt to explain self-ascriptions of body ownership. The view that a spatially bounded phenomenology is required for employment of the self-concept predicts, in particular, that deafferented subjects shouldn't merely experience their actions as remote control, but take their actions to be carried out by a strange or alienated body. This is not what happens.¹¹ Deafferented subjects don't feel their body extending where they see their actions taking place. It doesn't follow that they fail to believe and know it is their own bodies they are acting with.

I find it hard to think of any other phenomenologies that would both be plausibly required for employment of the self-concept in self-ascriptions

and have the desired consequence our dissenter goes after, namely, that third-personal, visual awareness will only ground a spurious self-concept. It seems likely, for instance, that self-ascription of deafferented action can't take place without a distinctive sense or phenomenology of agency. However, the phenomenology of agency can be induced on the basis of visual information retrieved in the absence of proprioceptive feedback.[12](#) This impasse shows that phenomenology doesn't offer convincing reasons against the idea that third-personal, visual experience can fundamentally ground employment of a genuine self-concept.

No fundamental third-personal ground

The other line of resistance to the multi-perspective interpretation set out above would seek to make plausible that, whereas self-ascriptions of deafferented action involve genuine employments of the self-concept, they are nonetheless fundamentally grounded in first-personal awareness. Relevant formulations of this sort of objection will need to heed two cautionary points. First, the allegedly first-personal awareness on which, according to this line of reply, employment of the self-concept is based can't be somatic proprioceptive awareness. The reason is that, as pointed out above, in the extreme cases under focus, proprioceptive awareness will at most provide feedback from the collar up, and this is plausibly not fundamental in grounding self-ascriptions of actions performed with one's limbs (such as raising, grabbing or pointing). Second, it is also crucial to note that the kind of account advocated here doesn't entail that self-thought involved in deafferented self-ascription doesn't require first-personal awareness at all. In the limit, the account is committed rather to the view that such self-ascriptions are, in the counterfactual sense made clear above (Section 2), fundamentally grounded in third-personal awareness whether or not it is also true that they are grounded, perhaps as fundamentally, in first-personal awareness. To have traction in the defence of sole-object views, therefore, the line of reply we are envisaging in this section will have to make it plausible that the fundamental grounds sustaining employments of the self-concept in self-ascription of deafferented action are first-personal through and through.

One possible route to flesh out this kind of criticism is based on the idea that third-personal, visual awareness at work in self-ascriptions of a deafferented token action concerns, in effect, only the action in question but not the subject of the action. An analysis of self-ascriptions in alignment with this idea has been outlined in Bermúdez ([2017](#), Chap. 7). The employment of the self-concept in the self-ascription will, according to our objector, be every bit as first-personal as any other employment. The awareness involving the action of raising one's arm might be taken to be third-personal, visual awareness but not the corresponding judgment to the effect that the third-personally accessed action is one's own.

Suppose this is true and, hence, that the third-personal awareness we take to be fundamental for deafferented action self-ascription concerns merely the action but not the subject of the action. What would then be the ground for ascribing the action, third-personally presented, to oneself? There will only be such a ground, I submit, if one assumes that the third-personal, visual awareness of the action is somehow indicative of one's authorship with respect to that action. Visual, third-personal bodily awareness must therefore not merely be fundamental to thinking about the action in question but to thinking about the action in question as being carried out by oneself – as opposed to any other. In short, a link would have to be posited between a third-personally accessed physical action and employment of the self-concept in the self-ascription. Note, however, that the existence of such a link is enough to draw our conclusion that employment of the self-concept in the self-ascription will itself be fundamentally grounded in third-personal awareness. Even on the assumption that the self-concept can't be instantiated without first-personal awareness, it would still be true that the employment of the self-concept in the self-ascription of the action is also fundamentally grounded in visual and, *ex hypothesi*, third-personal awareness.¹³ One may wish to reject the existence of such a link between the alleged first-personal employment of the self-concept and third-personal, visual awareness. However, on the assumption that only third-personal, visual awareness of the relevant action is available, this would leave mysterious how such awareness – without a link to oneself – could ever lead to the kind of self-ascription under focus. Third-personal awareness of a token action has to provide, as it were, a path to a particular self (oneself!) in order for it to actually ground the self-ascription of the action – as opposed to the ascription of the action to another or to no-one in particular.

A perhaps more promising strategy to defend the view that employment of the self-concept is only grounded in first-personal awareness is to suggest that visual information of the sort deafferented patients recruit is itself first-personal. The ecological theory of perception owed to James J. Gibson is probably the most elaborated articulation of this idea. According to Gibson (1966, 1979), vision incorporates self-specific information or information that 'specifies the self as distinguished from the environment' (Gibson 1979, 104). Visual self-specific information of this sort comes in three types. It is self-specific information about structural body parts (such as the nose and visual angles towards one's limbs), invariant elements in the optic flow generated through motion, and information about the possibilities for action in the environment (so-called affordances) (see Bermúdez 1995, 1998 for discussion). This is not the place to examine in detail all these sources of self-specific information. If the ecological approach is right, however, vision certainly incorporates a first-person perspective in the sense of information that can only originate in and be about the subject's body. It is precisely for

this reason that several authors have suggested that vision also provides grounds for self-ascriptions with the IEM property (see above).

Even in a strictly Gibsonian framework, to accept that vision contains elements characteristic of a first-person perspective is not to rule out the existence of both self-specific (or propriospecific) visual information – uniquely specifying the body – and exterospecific visual information about the body – specifying one’s body as an object among others. One preliminary question is therefore whether deafferented subjects exploit self-specific visual information when they carry out and self-ascribe basic physical actions. I think it is plausible that they typically do. The angles from which they visually perceive their limbs moving are often angles that are anatomically congruent only if belonging to their own body, visually perceived. An example of this is how IW actually managed to walk, tipping down his head to monitor the coordination of his limbs along the way. From that perspective, it can only be his own walking body he is watching. It is therefore plausible that deafferented subjects typically exploit self-specific visual information.

Now, even if deafferented subjects typically exploit self-specific visual information to carry out their actions, it is doubtful that this is necessarily the case. It is not hard to imagine situations in which the limbs deafferented people see while they act are anatomically compatible with seeing somebody else’s body. For instance, they may see their hands right before their eyes in a way that is compatible with seeing the hands of someone else standing behind them. They can also act by having visual feedback when they see their own body reflected in a mirror.¹⁴ Under this light, it is entirely plausible that the kind of bodily information deafferented subjects use and the kind of practical reasoning they engage in is, at least sometimes, strikingly analogous to the information and reasoning they would engage in if acting with someone else’s body (Howe 2018, 71–74). It follows that the target awareness is awareness of a body that could likewise feature as grounds for the ascription of the action to another.

But this point in fact reveals a related and deeper reason to deny that self-specific visual information can actually deliver a first-person perspective in the relevant sense. For to grant that visual self-specific information about the acting body is operative in carrying out and self-ascribing the action is not yet to accept that this information gives rise to first-personal awareness of an acting body, as opposed to awareness of an acting body that could also be someone else’s. Plausibly, self-specific information about a subject’s body B merely requires that B be the only source of the information. It is self-specific in that it is information solely concerning the subject’s body. Information giving rise to first-personal awareness of the body is arguably more demanding: it is information that presents the subject’s body B as its sole object or source. Only the latter would seem to possibly sustain an awareness of B as the subject’s body, first-personally presented.¹⁵ In a nutshell, to visually experience one’s

own body is decidedly not yet to experience it as one's own, even if it can only be our own body that we experience.

Thus, while the ecological approach might be right about the existence of self-specific visual information in action, it is unlikely that this information will figure centrally in an account of first-personal awareness of the deafferented acting body.¹⁶ It is precisely for this reason too that the suggestion that self-ascriptions of deafferented action are grounded in self-specific visual information would hardly have the resources to account for the phenomenological contrast between the way subjects with normal proprioception and deafferented subjects experience their own actions. This contrast would evade us if we take the sources of bodily information recruited in each case to fundamentally involve only a first-person perspective.

At this point, a theorist might attempt to press for the idea that visual information is genuinely first-personal and explain the phenomenological contrast by merely invoking (the lack of) proprioception: first-personal visual information and proprioception would account for non-deafferented action phenomenology, whereas first-personal visual information and lack of proprioception would correspond to 'pilot in a ship' or 'remote control' phenomenology.¹⁷ When considering the relevant self-ascriptions, the basic idea would be that the self-concept is such that it allows for applications that are grounded only in first-personal visual information – in the case of deafferentation – and applications that are grounded both in first-personal visual and proprioceptive information – for normally afferented subjects. However, while certainly consistent, the resulting view seems to get the phenomenological contrast wrong: it suggests that the grounds for the self-ascription of deafferented action are as genuinely first-personal, phenomenologically speaking, as in the case of afferented action. This suggestion not only fails to address the gap between visual self-specific information and first-personal awareness pointed out above, but also jars with the features of deafferented 'pilot in a ship' or 'remote control' phenomenology where the acting body is presented as an object among other objects equally external to the subject (see Section 2). For these reasons, I would reject the proposed line of explanation.

Conclusion

Deafferentation has proven to be a crucial case study for the elucidation of the complex connection between body, self and action. In this paper, I have been concerned with unveiling its impact on our understanding of the concept of self at work in self-ascriptions of basic physical action. According to the view I recommend, these cases show that it is possible to ground one's employment of the concept of self in visual bodily awareness that is fundamentally third-personal. This is the natural conclusion to reach, as we have seen, if we pursue an analysis with the aid of the independently developed multi-perspective account. If correct,

this proposal reveals a wider range of bodily perspectives apt to ground employment of the self-concept than hitherto considered. The employment of the self-concept in bodily self-ascriptions is not, I have argued, necessarily tied to bodily awareness that presents the body as its sole object. These considerations also show a clear sense in which fundamental bodily information operative in thinking of a self as oneself might also be available to others.

These points, however, raise a number of questions that are likely to spur further research. As flagged earlier in this paper, one capital question concerns the conditions under which self-ascription of action fundamentally grounded in third-personal awareness leads to self-knowledge. There are others. For instance, are there other cases, analogous to deafferentation, in which third-personal bodily information is fundamental in employments of the self-concept? Also, do cases of deafferented action entail the possibility of failure of immunity to error through misidentification regarding the agent of one's own actions? More generally, what is the impact of the analysis provided on our understanding of the normal and constitutive ties between the self, action and the body? It is not obvious what the answer to these questions, and surely others, will be in the light of the foregoing discussion. The answers, whatever they turn out to be, will be important ramifications of the claim that one can think of oneself as oneself and do so, fundamentally, in a manner that exploits third-personal awareness presenting one's body as an object among others.

Notes

I borrow the term 'sole-object' from Martin's writings. Schwenkler ([2013](#)) criticises sole-object views by considering body parts as proper objects of bodily awareness, but offers a picture of bodily awareness that, just as sole-object views would have it, guarantees that only one's body is its source. Other than that, I shall not discuss the details of the different versions of this family of views. As considered here, sole-object views take bodily awareness presenting the body as its sole object to be a necessary condition for this awareness to ground employment of the self-concept in bodily/action self-ascriptions and self-awareness. Whether this is also a sufficient condition is a further matter of controversy (cf. Martin [1995](#), [1997](#)).

The point is so obvious that it hardly gets explicitly mentioned in the clinical reports. The kind of action awareness at stake is perhaps more emphatically captured in Peter Brook's play on IW's case (see Cole [2016](#), Chap. 5, esp. 59–60).

Not, however, 'I am raising my arm' since the latter would suggest the (proprioceptive) feeling of the arm as one's own (Vignemont [2018](#), 167). The focus is here on self-ascription/ownership of the action, not the body as such.

One interesting ramification in this regard concerns the suggestion that this kind of knowledge is not based on observation (Anscombe [1957](#); O'Shaughnessy [1980](#)). I address this complex issue in Verdejo ([manuscript](#)) and I shall sidestep it in what follows.

According to Wong ([2018](#)) the difference between deafferented and afferented subjects on this count has to do with the fact that deafferented subjects lack a grasp of practical possibilities through engaged, first-personal motor imagery. Although I am indeed sympathetic to Wong's approach, other approaches might also be compatible with the analysis presented here.

When approached in terms of capacities, the key idea is put in terms of different exercises of or ways of exercising the same thought capacity. For simplicity's sake, however, I will not attempt to account for the theoretical differences corresponding to the terminological variation reflected in this sentence. The differences might be important when discussing each author's work but not presently.

Other works have undertaken that task (see, e.g. Bermúdez [2017](#); Ludlow [2019](#)).

This is so even if it is a requirement for employments of a self-concept referring to x from the

first person perspective by a thinker y that $x = y$ – though even in this case the terms uttered to express the thought containing that self-concept may go beyond the first person pronoun (as when one refers to oneself in the third person). I am grateful to an anonymous referee for this journal for urging me to clarify these points.

In my view, they will be preserved, in particular, as insights into the nature of the bodily first person perspective but not, of course, as insights about the whole arrange of perspectives from which the self-thought can be employed on bodily grounds.

The basic idea is that vision involves information that can't fail to specify the experiencer's body. I shall return to this idea below, as it can be taken to support the second type of objection against the multi-perspective account.

Not at least after the basic action capacities are regained (cf. Cole [1991](#)). As can be shown with the aid of brain-machine interfaces (Evans et al. [2015](#)).

The link might be, for instance, a matter of a (perceived) temporal correlation between one's intention to move and the body's actual movement (what in psychological studies is known as 'intentional binding'). Still, the fundamental ground for the employment of the selfconcept in the self-ascription will be third-personal in the case at hand. This is plausibly what happens when you identify your avatar's actions in a multiplayer video game. This kind of self-identification requires thinking of oneself as an object third-personally presented on a screen – what Boyle ([2018](#)) has elucidated as 'objective self-awareness' (cf. Evans [1982](#), 205–215). The temporal correlation between inputs to

your controller and the avatar's actions is what indicates that it is your avatar and no other. Yet there is no point in denying that the use of 'I' to refer to your avatar's actions will be fundamentally grounded in third-personal awareness of the scenes in the video game.

It has been shown that deafferented subjects, in fact, outperform control subjects in some mirror drawing tasks (Lajoie et al. [1992](#); Miall and Cole [2007](#)).

Cf. Martin's jelly fish example (Martin [1993](#), 211–212). The line dividing self-specific information and first-personal awareness corresponds, in the terms I am proposing, to the one separating out degree 0 and degree 1 of first person content involvement (Peacocke [2014](#)). I am indebted here to Vignemont ([2018](#), 61–63).

Bradley ([2021](#)) provides a recent account that agrees with this diagnosis when it excludes deafferentation from a feeling of minimal ownership understood as the 'first-personal aspect of bodily awareness' arguably preserved in other ownership disorders.

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Notes on contributor

Víctor M. Verdejo is a Ramón y Cajal Research Fellow at the Department of Humanities at Pompeu Fabra University (Barcelona, Spain). He is the author of over 30 papers covering a range of issues in philosophy of mind and language and co-editor of the forthcoming book *Sharing Thoughts* (Oxford University Press). His current research focuses on the first person, communication and bodily action.

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