



Somatosensation and the First Person

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Abstract

Experientialism about the sense of bodily ownership is the view that there is something it is like to feel a body as one's own. In this paper I argue for a particular experientialist thesis. I first present a puzzle about the relation between bodily awareness and self-consciousness, and introduce a somewhat underappreciated view on the sense of bodily ownership, Implicit Reflexivity, that points us in the right direction as to how to address this puzzle. I argue that Implicit Reflexivity, however, does not provide a full solution to the puzzle. I then introduce a novel view on the sense of bodily ownership that inherits a central tenet, Reflexivity, from the above view, without having its flaws. According to Reflexivity, the sense of bodily ownership consists in the reflexive character of bodily sensations, namely in the fact that bodily sensations have experience-dependent properties as part of their content. Cashed out this way, Reflexivity is an attractive way of explicating the notion that bodily sensations are experiences of the body as subject. Reflexivity also highlights a central, but so far neglected, connection between the sense of bodily ownership and the sense of experience ownership.

1 The Sense of Bodily Ownership

The class of mental states that we often call *bodily sensations*, or *somatosensations*, includes pains of different kinds, feelings of bodily temperature, touch, and interoceptive sensations such as hunger or thirst; as well as sensations related to balance, proprioception, and kinaesthesia (Armstrong 1962; Vignemont 2020).¹

¹ Balance, proprioception, and kinesthesia are not as paradigmatically phenomenally rich as the other bodily sensations mentioned. The vestibular system is sometimes said to be phenomenologically “silent”, since most conditions that activate it also activate other sensors such as proprioceptors and tactile receptors (e.g. Day and Fitzpatrick, 2005, R583; but see Wong, 2017). Besides, Anscombe (1981) thought that, strictly speaking, there is no such thing as sensations of bodily posture and movement. On her view, the notion of a sensation of sitting crossed-legged, for instance, is just a way of speaking on the grounds of the sensations of “a pressure here, a tension here, a tingle in this other place” that “are supposed to be sensations of being in that bodily position because, perhaps, they have been found to go with that” (ibid., 72).

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Somatosensations are very diverse: what it is like to have a headache is remarkably different from what it is like to feel one's legs crossed, a burn on the hand, or a tickling in the feet. However, in the last few decades there has been a growing interest in what might be a phenomenal commonality between them²: a so-called *sense of bodily ownership* (henceforth SBO; e.g. Martin 1995; Dokic 2003; Bermúdez 2018a; Chadha 2018; Vignemont 2018; Bradley 2021) in virtue of which somatosensations appear not to be anchored in some body or other, but particularly in *one's own* body. This paper introduces a novel account of the SBO. This novel account inherits the central tenet of a somewhat underappreciated view on the SBO, *Implicit Reflexivity*, while, I argue, it overcomes its flaws.

The debate on the SBO starts from the fact that, when we make judgments based on somatosensations, we typically judge the body that we feel in this way to be our own body. For instance, if I were to describe my current sensation as of neck stiffness, saying that “I can feel that *a neck* is stiff”, or “I can feel that *some neck* is stiff”, I would not be as precise and informative as if I said that “I can feel that *my neck* is stiff”. More generally, in normal circumstances, if I were asked whose body it is that I feel hurting, burning, or tickling, I would say *mine*.

Talk of a sense of bodily ownership aims at capturing this phenomenon. For one to have a SBO is for one to be aware of the body one feels in somatosensation as being one's own.³ Disagreements about the SBO in the philosophy of mind emerge when we wonder about the precise nature of this awareness. Is there such a thing as *experiencing*, in somatosensation, a body as one's own? Or, on the contrary, is the SBO exhausted by the use of the first-person concept in the content position in judgments based on somatosensation? The family of views that favour the first option I will call *experientialism* (Martin 1995; Dokic 2003; Billon 2017; Gallagher 2017; Peacocke 2017; Bermúdez 2018a; Vignemont 2018; Bradley 2021). For experientialists, the SBO consists of some aspect of the content and phenomenology of bodily sensations⁴: there is something it is like to feel the body as one's own.

My aim in this paper is to defend a particular way of developing the experientialist insight:

Reflexivity: Subjects have a SBO over somatosensorily perceived body parts in virtue of the experience-dependent nature of the properties that somatosensations attribute to these body parts. In other words, subjects have a SBO in virtue of the reflexivity of somatosensations.

² Or at least a very significant subset of them. Vignemont (2019) argues that interoceptive sensations do not involve a sense of bodily ownership.

³ This definition should be read non-factively. For instance, it is compatible with having a SBO for an nonexistent body part, insofar as one takes the body part that one seems to perceive to be one's own, as is often the case in phantom limb experiences (Melzack, 1990).

⁴ Most experientialists explicitly specify the SBO in terms of the *content* of bodily sensations, which in turn implies a phenomenal difference (e.g. Martin, 1995; Dokic, 2003; Bermúdez, 2018a). However, Experientialism is in principle compatible with the idea that the first-personal component of bodily sensations is contributed by their experiential *mode* (see e.g. Recanati, 2007, 2009, 2012).

Reflexivity relies on the idea, to be extensively developed below, that somatosensations are reflexive, in the sense that they have experience-dependent properties as part of their content. As I will argue, Reflexivity offers a compelling way out of a venerable puzzle about bodily awareness and self-consciousness. I lay out this puzzle in Section 2, following Bermúdez's (2020) presentation of it: either somatosensation somehow presents the body *as subject*, and hence counts as a genuine form of self-consciousness; or somatosensation just presents the body *as object* and is not a genuine form of self-consciousness.⁵ There are weighty philosophical reasons to want to count somatosensation as a case of self-consciousness proper, but what it might mean for it to present the body as subject is not entirely clear.

Still in Section 2, I argue that paying attention to *judgments* based on somatosensation can help us clarify what is meant by "body as subject." As I said above, we typically make reference to *our own* body in these judgments. In doing so, we make reference to the subject of sensation as part of the content of that sensation. Given that these judgments are based on somatosensation, the body must plausibly also figure in the content of somatosensation in an analogous, equally subject-involving manner. I will argue that this is a compelling analysis of what it means for somatosensation to present the body as subject.

From Section 3 onwards, I spell out the idea of a subject-involving experience. In particular, I show that Reflexivity is an attractive way of cashing out the subject-involving character of somatosensation. I first present Dokic's own development of Reflexivity, Implicit Reflexivity (Section 3.1), and then identify two shortcomings of his view: first, it overgenerates to exteroception; second, it equivocates between *experience*-involving contents and *subject*-involving contents (Section 3.2).

In Section 4, I patch these shortcomings. On the one hand, I show that stopping reflexivity-based views from overgenerating requires embracing the idea that the reflexivity of somatosensory experiences makes a contribution to their phenomenology. On the other hand, I present a way to bridge the gap between experience- and subject-involving contents: relying on what I will call the *sense of experience ownership* (SEO). The resulting position is a novel and attractive account of the SBO. I conclude, in Section 5, by briefly comparing my proposal to alternative forms of experientialism.

2 Judgments of Somatosensation and Experiences of Bodily Ownership

In a fairly recent article, Bermúdez (2020) discusses a classical problem of bodily awareness and self-consciousness⁶ in terms that help clarify how exactly judgments grounded on somatosensation constrain the content of somatosensation

⁵ Talk about the body *as subject* and *as object* may remind the reader of similar distinctions made in the context of the debate on the immunity to error through misidentification of first-personal judgments (i.e. uses of "I" as subject and as object). While the debate on immunity is certainly connected to the debate on bodily ownership, in this piece I am focusing on the latter.

⁶ Bermúdez articulates the problem by mentioning theses from Kant ([1781/1787] 1998) and Locke ([1689] 1975). He also refers to Schopenhauer (1970, vol. 2; as cited in Janaway, 1989) and Cassam (1997) as having contributed to shaping the dialectic.

itself. Bermúdez, who is dialoguing with Longuenesse (2017), writes that “embodiment comes into the picture only as a function of the *predicative* component of the thought, not the self-attributive I component” (Bermúdez 2020, 111, my emphasis). In other words, what we care about when we care about embodiment is not the *I* in “*I* can feel that my neck is stiff”, but the *my*. We care about the relation that conscious beings have with a physical body that often enters into the picture via the object side of their experiential reports.

But why is this relation intriguing at all? Bermúdez notes, first, that there is a sense in which, in bodily awareness, our bodies are presented to us as ordinary physical objects (ibid., 97): they are, e.g., presented as extended and situated among other bodies. This presentation of bodies as objects agrees with the fact that they usually occupy the content position of our judgments based on somatosensation. But, on the other hand, many agree that “nothing can count as a genuine form of self-consciousness unless it is consciousness of oneself *as a subject*” (ibid., my emphasis). These two observations are in tension. We take bodily awareness to be awareness of an object, but we also take it to be awareness of ourselves: indeed, we take it to be one of the most basic ways in which we are conscious of ourselves. The turn of phrase according to which, in somatosensation, we experience *the body as subject* encapsulates this tension. How this tension is resolved is far from straightforward.

I will not discuss the details of Bermúdez’s own solution in this paper. What I am interested in is how the interplay between the predicative and the self-attributive elements of judgments based on somatosensation helps us understand the SBO. In a nutshell, Bermúdez is right that typical judgments based on somatosensation mention the body “as a function of the predicative component of the thought”. But this doesn’t mean that bodies are mentioned *merely* in that capacity: self-attributing a body is attributing the body to somebody, where this somebody is *oneself*. More precisely put: manifest in judgment by the use of the first-person indexical “my”, the SBO picks out the body by mentioning, as well, the subject of the experience *qua subject of the experience*.

For an instance, consider again “I can feel that my neck is stiff.” This judgment describes a proprioceptive sensation, and its predicate describes what is felt in the sensation. Crucially, the particular neck mentioned in the predicate enters the judgment as (i) the neck of the individual having the relevant sensation, (ii) where this individual is *me* – i.e. the individual whom the person doing the judging picks out by “I”.⁷ Hence, the judgment mentions a body (part) in the predicate only in virtue of its relation to an experienter that is picked out in first-personal terms. We can call this the *subject-involving character* of judgments of somatosensation. The body figures in judgments of somatosensation *as subject* at least in that those judgments are subject-involving in the sense just described.

⁷ This is intended as metaphysically neutral with respect to whether subjects are identical to their bodies. I use “ownership” in this paper, as well as the notion of bodies being *of* subjects, in order to stick to the terminology conventionally used in this debate. Yet, the following might be an acceptable restatement of (i) and (ii) above: the particular body part that the predicate of the judgment refers to as felt in the sensation is referred to in virtue of the fact that it is (i) *part of the individual* having the relevant sensation, (ii) where this individual is *me*.

A possible objection suggests itself at this point. Some natural ways of reporting somatosensory experiences do not feature the body in the predicate as clearly as my toy example. Consider for instance “My neck is stiff”, in which the relevant body part occupies the position of the grammatical subject. This might seem to pose problems both to Bermúdez’s idea that embodiment enters into the picture in the predicative component of thoughts, and to my reformulation of this idea.

In response, when we use “My neck is stiff” as a report of somatosensation, it ostensibly is the expression of the *content* of that sensation: the subject reports the state of her neck without making explicit that the report actually tracks a proprioceptive state of hers. This is entirely analogous to how I declare “There is a tree”, instead of “I can see that there is a tree”, when I am reporting on my visual experience (say, as prompted by an ophthalmologist), and on the grounds of that very visual experience. Once we see this, this way of expressing bodily sensations is amenable to the same kind of treatment as “I can feel that my neck is stiff”.

The subject-involving character of judgments of somatosensation allows us to reformulate, and clarify, our initial question: is there such a thing as experiencing somatosensorily the body as one’s own? We may now ask *whether bodily sensations themselves are subject-involving* in a way analogous to how judgments of somatosensation are. That is to say, whether the content of bodily sensations is such that the body figures in it in virtue of its relation to the subject of the experience.

As far as I can see, full-blown experientialism about the SBO is in principle committed to answering the latter question affirmatively.⁸ Experientialism takes bodily sensations to bear the mark of the first person in a way that, on its own, warrants its canonical manifestation in judgment. If we take judgments as our initial datum, then a *phenomenology of bodily ownership* should strictly speaking consist in the subject-involving character of somatosensation. In turn, if we can characterise bodily sensations as subject-involving in this way, then we gain a substantive interpretation of what experiencing the body as subject in somatosensation might mean. In the next section I take up this task.

3 Reflexivity

It has been standard to assume that the content of somatosensory states can be analysed, minimally, as involving a *descriptive* component and a *spatial* component. In other words, this content can be spelled out in terms of properties, in principle tracking bodily events, together with the specific body or body parts where these properties are felt to be instantiated (Dokic 2003; Vignemont 2007). On the grounds of some of my current bodily sensations, for instance, I can tell how my back is bent, or how my heels are chafed from the rubbing of my shoes. Some accounts about the SBO reduce it to some of these minimal components of somatosensations: the SBO has been claimed to reduce to the spatial content of

⁸ Unless it is a form of experientialism based on experiential modes; see footnote 4.

somatosensation (Martin 1995; Bermúdez 2018a), or to the kinds of properties that one feels when undergoing these sensations (Dokic 2003).⁹

The former view – that the SBO consists in the spatial content of bodily sensations – has been discussed by most authors who have written critical comments on published views on the SBO (Dokic 2003; Vignemont 2007; Peacocke 2015; Billon 2017; Vignemont 2018; Bradley 2021; Serrahima, (forthcoming)). Comparatively much less attention has been paid to the latter account – the one that focuses on the kinds of properties felt in somatosensation. In this section I will argue that this is a significant omission, for this account actually paves the way for a characterisation of bodily sensations as subject-involving.

3.1 Implicit Reflexivity

Our bodies, just as other objects, have properties, which we pick out by exercising different sensory capacities. Imagine, for instance, that you fall down and scrape your knee against the ground. After the fall, you look at your knee to discover a big graze on its skin. Suppose that you also notice an intense, burning sensation, which you will report to feel exactly in the knee's graze when asked where it hurts. What it is like for you to see the wound will presumably be different from what it is like for you to feel it hurting. Nevertheless, there is a sense in which both experiences capture a property your knee has. Let us call this property *Damage*.

As the example shows, somatosensation is indeed similar to exteroception in that it informs us about states of our bodies that are in principle open to external observation. However, it is also *different* from exteroception in a sense that Jérôme Dokic (2003, 325) cashes out thus:

Whatever property we can be aware of 'from the inside' is instantiated in our own apparent body. Bodily experience seems to be necessarily short-sighted, so to speak, since it cannot extend beyond the boundaries of one's body. The very idea of feeling a pain in a limb which does not seem to be ours is difficult to frame, perhaps unintelligible. What seems to be an essential property of bodily experience has no analogue in external perception.

The passage suggests the thesis that, if we (seem to) perceive a body somatosensorily, then necessarily we have a SBO for the body that we (seem to) perceive in this way (Martin 1995; Brewer 1995; O'Shaughnessy 2008; Bradley 2021). Never mind *necessarily*, it is surely *typically* the case that, when a

⁹ Other accounts specify the SBO in terms of the affective character of bodily sensations (Vignemont, 2018; Bradley, 2021), their agentive dimension (Peacocke, 2017), a pre-reflective self-component putatively involved in all the former (Gallagher, 2017), or even a dedicated quale of ownership (Billon, 2017). The minimalist approaches mentioned in this paragraph arguably have the virtue that, at least prima facie, they demand as parsimonious a content to bodily sensations as all authors addressing the problem of the SBO could be ready to agree on. For a detailed taxonomy of views on the SBO, see Vignemont (2018, and 2020, 48).

somatosensory state occurs, the subject of the state takes it to be about her own body.¹⁰ This contrasts with external perception: when a state of external perception occurs, its subject will very often *not* take it to be about her own body. Both facts make perfect ecological sense, since in normal conditions somatosensation is only about one's own body, whereas this is not so for exteroception.

The contrast just outlined constitutes a basic constraint on views on the SBO. Every such view must explain why it is typically the case that, when we have a bodily sensation, we self-attribute the body the state is about, whereas this is not so for episodes of external perception in general. Whatever aspect of bodily sensations we propose as grounding the SBO, it must be typically present in somatosensation and typically absent in exteroception.

Consider now the following schema of the structure of a given conscious experience (Dokic 2003, 323):

E: Experience (a particular body part is F)

In this notation, the parentheses enclose the content of the experience, namely that a certain property, F, is instantiated at a certain bodily location. As it stands, E could in principle be a schematic description of a bodily sensation just as it could be a description of a state of external perception, for instance of visual perception. Something needs to be added to E so that it fits only bodily sensations. On Dokic's view, what needs to be added to E concerns "facts about *the perceived* properties F" (ibid., 326. My emphasis).¹¹

In order to clarify his idea, in what follows, let F^S stand for *property F as targeted by a somatosensory experience*, and let F^E stand for *property F as targeted by an exteroceptive experience*. For illustration, when you look at your knee in the grazed knee example above, you will have a visual experience involving Damage^E , whereas by feeling pain in the knee you will have a somatosensory experience involving Damage^S .¹² Dokic's proposal is that the specificity of somatosensory versus exteroceptive experiences boils down to a difference between F^S and F^E . In particular, his proposal is that F^S is *constitutively dependent* on the occurrence of the token experience it is a content of: it could not be instantiated if the token experience it is a content of didn't occur. In this sense, F^S is *experience-dependent*. Dokic calls

¹⁰ The thesis that, if we perceive a body somatosensorily, then we *necessarily* have a SBO for it, has been contested on the grounds of several empirical cases (Billon, 2017; Vignemont, 2018, Sections 2.2 and 2.3). One central case here is somatoparaphrenia (Vallar and Ronchi, 2009). Somatoparaphrenia has been reported mostly in patients with right brain damage, and it is characterised by the productive symptom (Vallar, 1998) by which patients claim that the contralesional side of their bodies doesn't belong to them. Cases have been reported in the literature in which, still endorsing their beliefs of disownership, patients report to feel sensations in their disowned limbs (Moro et al., 2004; Bottini et al., 2002). This casts doubt on whether feeling the body somatosensorily necessarily implies experiencing it as one's own (but see Bradley, 2021).

¹¹ Dokic (2003) formulates his proposal after he has explored, and ruled out, specifications of the SBO in terms of modes of presentation of F, in terms of perceptual modes, and in terms of kinds of cognitive faculties.

¹² Note that this assumes that both experiences (possibly mis-)represent your knee as instantiating the same objective property, which we have called *Damage*.

the experiences that have an experience-dependent property as part of their content *reflexive*. Bodily sensation, but not exteroception, is *reflexive* “in the sense that it is about instantiated properties which entail the experience itself” (ibid., 327). Dokic’s full schematic characterisation of bodily sensations is thus (ibid.):

IR: Experience (a particular body part is F) | where the perceived instantiation of F is constitutively dependent on this particular experience

In IR, the clause after the parentheses qualifies F: the “perceived instantiation of F” – in other words, F^S – is experience-dependent, and hence the experience is reflexive. According to Dokic, IR characterises all and only bodily sensations. Hence, IR purportedly contains an explanation of the SBO, to wit:

Reflexivity: Subjects have a SBO over somatosensorily perceived body parts in virtue of the experience-dependent nature of the properties that somatosensations attribute to these body parts. In other words, subjects have a SBO in virtue of the reflexivity of somatosensations.

Reflexivity says that we experience our bodies as our own in somatosensation because we pick them out via experience-dependent properties. It is important to note that, in IR, the reflexivity of bodily sensations is implicit: it is not part of their content that the properties involved in them are experience-dependent. This is why Dokic calls his view *Implicit Reflexivity*.¹³

As I will argue in the next subsection, Reflexivity as developed in Implicit Reflexivity still falls short of offering a satisfactory account of subject-involving somatosensory experiences, and hence the SBO. It is, however, an important stepping stone to such an account.

3.2 Overgeneration of Ownership, and Experience-Involving Contents

The general idea behind Implicit Reflexivity is that the body that I am feeling somatosensorily feels like my own in virtue of an intimate link between the properties experienced in it and the sensations themselves. These properties, the idea goes, are in some sense psychological, despite being represented as located in specific body parts.¹⁴

I find this idea attractive, and largely on the right track. However, Dokic doesn’t go far enough in developing it: as I will argue, Implicit Reflexivity does not yet spell out why this general idea about bodily sensations should bring into the picture subjectivity, in the specific sense of an experience of bodily ownership. Consider IR again:

IR: Experience (a particular body part is F) | where the perceived instantiation of F is constitutively dependent on this particular experience

¹³ A fair question is how Dokic would explain the similarity, mentioned above, between bodily sensations and exteroception, namely that they inform us about states of affairs identical in kind. Although Dokic’s view might well have the resources to cover this issue, he does not address it. His worry, as mine in this paper, is the contrast just explained between bodily sensations and exteroception.

¹⁴ Dokic captures this duality of properties F^S by calling them *psychophysical* properties. This way of thinking of bodily properties in somatosensation is directly in line with Brewer’s (1995).

The content of the experience defined in IR is plainly that properties are instantiated at particular locations in a body. What in principle makes the body be felt as one's own is the fact that F^S – namely F as targeted by the somatosensory experience – is experience-dependent. But this fact is not represented in the experience itself. It is then unclear how it can contribute to the phenomenology, and hence unclear how Implicit Reflexivity is an implementation of the thesis that there is a *phenomenology* of bodily ownership.¹⁵ A concrete problem brought about by the experience-dependence of F^S not being phenomenologically manifest is that, in fact, IR does not yet distinguish between somatosensation and exteroception. Exteroceptive experiences may fall under IR, and hence, the view does not meet the constraint described in 3.1 above.

Take *seeing* damage on a particular knee. According to Dokic, there is a property, Damage^E , which is [damage *qua* exteroceptively perceived]. Damage^E is an experience-dependent property: it exists only if targeted by an exteroceptive experience in particular. It therefore meets IR. But *seeing* damage on a particular knee does not generate the kind of ownership that we are trying to analyse. The problem is quite general: any exteroceptive experience as of any arbitrary extramental property P causes trouble to IR, insofar as we recognise, with Dokic, the existence of property [P *qua* perceived]. This property will obviously depend on the occurrence of token perceptual experiences, also in cases of exteroception.¹⁶ Yet, most exteroceptive experiences do not imply a self-attribution of their contents.

Implicit Reflexivity suffers from yet another, more fundamental limitation. Suppose, for the sake of the argument, that we *are* phenomenally sensitive to the experience-dependence of F^S . What are we phenomenally sensitive to in this scenario? As far as I can see, to something that does not quite amount to a sense of *bodily ownership* unless further elements are added to the picture. Assuming (contrary to fact, as I have been arguing) that IR *does* make experience-dependence phenomenally salient, then somatosensations include the body in their content because they pick it out

¹⁵ To be fair, Dokic is alive to this problem (2003, 329–30). He tentatively proposes, in reply, that the SBO might be “at least partly determined by the subject’s finding the transition from a particular case of bodily experience to a judgment like ‘My arm is hurting’ *primitively compelling* in Peacocke (1992)’s sense” (ibid.). However, this does not yet answer the question as to how exactly Implicit Reflexivity involves a phenomenology of bodily ownership. One might agree with Peacocke (1992) that some concepts are such that a condition for possessing them is finding the rational transitions from certain experiences to judgments in which the concepts are articulated primitively compelling. In particular, possessing the concept of a body being one’s own might partly consist in finding the transitions from bodily sensations to judgments in which this concept is articulated primitively compelling. In any case, that these transitions are peculiar has never been under discussion: quite the opposite, it is one of our starting points. The question is, then, what it is that bodily sensations specifically have that makes them *the* class of experiences from which judgments of ownership rationally follow in this way. Experientialism is the view that it is their phenomenology. The appeal to primitively compelling transitions does not help explain how IR implements the experientialist thesis.

¹⁶ Note that this is compatible with any and all options as to the metaphysics of the exteroceptively perceived property. Think of colours: one could be an objectivist about colours (Tye, 2000) and think of them as fully extramental entities, or one could be a response-dependent theorist (Shoemaker, 1994, 2000; Egan, 2006). My argument does not appeal to the metaphysical makeup of the properties, but to the metaphysical makeup of the *properties qua perceived*, which ostensibly does depend on the existence of a token experience.

via properties whose instantiation depends on the occurrence of the very experience they are a content of. According to this view, somatosensations are *token-reflexive*: they make reference to themselves via properties such as Damage^S; and in turn, the body figures in their content in virtue of its relation *to the experience itself* given the nature of the properties we assign to it.

However, an experience making reference to itself is not quite the same thing as it making reference to the experiencing subject, and therefore the view does not quite nail down what would be first-personal (subject-involving) about the contents of somatosensations: non first-personal judgments of the form “the neck that belongs in (the content of) this particular experience is stiff”, or “the knee (felt) in this particular experience hurts”, seem to capture adequately the content of instances of IR. But these judgments are not equivalent to “My neck is stiff” or “My knee hurts”.¹⁷ The latter pair of judgments, and not the former, are ordinary judgments of somatosensation. As explained in Section 2 above, by involving a first-person indexical, judgments of somatosensation mention a particular body (part) in virtue of its relation *to a subject*, and hence, for one to have an experience of bodily ownership means for one to have an experience such that the body figures in it in virtue of its relation to the experiencing subject.

In sum, Reflexivity, as developed in Implicit Reflexivity, falls short of a satisfactory account of the SBO. Still, it is a good starting point for such an account, if developed further: in fact, in normal conditions, picking out a body in perception in virtue of its relation to a phenomenally conscious experience straightforwardly implies picking it out in virtue of its relation to the subject. I develop this idea in the upcoming Section 4.

4 Fixing Reflexivity

Reflexivity is a plausible starting point to an experientialist account of the SBO because, I contend, if bodily sensations are reflexive, in the sense that experience-dependent properties feature in their content, then the body plausibly figures in them in virtue of its relation to the subject of the experience. But fleshing out this structure requires that Reflexivity departs from Implicit Reflexivity in two key respects:

- (1) The reflexivity of sensations must be *phenomenally salient*, so that being aware of my body as my own *just is* being experientially aware of the reflexivity of my bodily sensations; and
- (2) We must factor in that, in normal conditions, we take the experiences we are phenomenally conscious of as our own (in a sense to be immediately clarified).

¹⁷ Similar points about a distinction between subject- and experience-involving contents are made in Sebastián (2012, 2.2) and Guillot (2017, 2.2.2). Notice that here I am relying only on the idea that “X is related to *this experience*” does not mean the same as “X is related to *me*”. This is compatible with a wide range of views about the metaphysical relation between subjects and experiences, about our phenomenological access to these entities, and about the relation between the notion of subject and the notion of experience.

In other words, we need to factor in the fact that we have a *sense of experience ownership* (henceforth, SEO).

On this account, conditions (1) and (2) are both necessary and jointly sufficient for a subject to have a SBO. Condition (1) allows for (2) to make its contribution: we can leverage the SEO in our account of the SBO only if the reflexivity of our sensations is phenomenally salient. The reason why this is valuable – the reason why it is valuable to “factor in” the sense of experience ownership – is that doing so allows to bridge the gap between experience- and subject-involving contents. Besides, I will argue, binding an explanation of the SBO to the SEO is independently desirable.

Part of the compellingness of this proposal relies, of course, on the plausibility of (1). Condition (1) is eminently plausible at least for two reasons. The first, more general reason, is that the very notion of experience-dependence being phenomenally salient is unproblematically accepted by many, in another theoretical context: in philosophical discussion of visual perception, there is ample agreement that, in some circumstances, some perceived properties can *look* dependent on our perceiving them.¹⁸ For instance, Siegel’s (2010) discussion of how things ordinarily seem objective to us in vision – that is, of how the things we see seem to us to be present out there in the world, independently of our experiencing them – is built on a phenomenal contrast between these objective seeings and, precisely, other experiences in which things *do not seem* objective to the perceiver (see *ibid.* 183 and ff.). What she calls “visual sensations” belong to the latter class of experiences, some instances of which are the familiar, if somewhat infrequent, experiences of “seeing stars,” or of phosphenes. Indeed, “[i]f you look at a starry night sky and then (say, as the result of standing up too quickly) begin to ‘see stars,’ it would not look as if there were now more stars in the sky ... The same holds for phosphenes. If you see a reddish shadow projected on a white wall and then begin to enjoy a vivid red phosphene, it need not look as if the wall has sprouted another reddish shadow” (*ibid.*, 186). Other visual phenomena typically taken to seem dependent on our perceiving them are afterimages (Boghossian and Velleman 1989; O’Shaughnessy 2000; Kind 2008). The “stars”, the phosphenes, and the afterimages, it is argued, are not presented to us as objects, or properties of objects, out there in the world, and this is so in virtue of “a distinctive phenomenal character” (Siegel 2010, 187) that makes them look dependent on the very experience in which we are perceiving them.¹⁹

Condition (1) suggests to extend the idea of phenomenally salient experience-dependence to bodily sensations. At this point comes the second reason for its plausibility: there is at least one central case of bodily sensation for which ideas along the lines of (1) are common in the literature. This is the case of pain. There is indeed a tradition in philosophy that takes the concept of pain to refer to a phenomenal

¹⁸ I am thankful to an anonymous reviewer for inviting me to elaborate on this point, and for pointing me to Siegel (2010).

¹⁹ See, however, Phillips (2013) for thorough critical discussion of the idea that afterimages “manifestly appear in ways that are incompatible with their being apparent presentations of publicly visible objects” (*ibid.*, 423).

state. Levine's (1983) classical discussion of Kripke's (1972) anti-physicalist argument is based on this idea, already at play in Kripke's own argument. Following in this dialectic, the Phenomenal Concept Strategy against anti-physicalist arguments famously exploits the special character of the concepts, such as that of pain, by which we purportedly refer to phenomenal states, even if they are co-referential with physical concepts (see e.g. Tye 2009). More recently, Borg et al. (2020) offer an elaboration of the idea that one of the dimensions of the folk concept of pain is that it is a "paradigm mental, experiential" state (ibid., 15); and Liu (2021) has argued that "pain" is a polysemous term that reflects distinct concepts of pain, one of which referring to a mental phenomenon. On the assumption that ordinary ways of thinking and talking about experiences are guides to features of the experiences themselves, this suggests that pain presents itself to its subject as being, at least partly, a phenomenal event. Pain, which equally obviously concerns our body, is given to us as something whose existence depends on the fact that we are feeling it.

The gist of my proposal is that this line of argument can be exploited, beyond pain, to other bodily sensations, for a general account of the SBO. Before spelling this idea out, we should address what might be the most obvious concern about it: how to extend (1) to those bodily sensations that, on the face of it, convey that one's body is some mind-independent way – proprioception, for instance. That is to say, while pain appears to have both a phenomenal and a bodily facet, the objection goes, proprioception only seems to have a bodily facet: it only presents us, e.g., with the relative positions of our limbs.

My response is that, while the phenomenal structure described in (1) might be less obvious for cases like proprioception than it is for pain, it is still true of them. What pain teaches us is that, even if bodily Damage is as objective and extramental a property as one might wish, when this bodily Damage is targeted by somatosensation, it takes on a quality that arouses intuitions of phenomenality. Damage as targeted by somatosensation – that is, Damage^S – is intimately connected with our occurrent phenomenal experiences, and more importantly, it is phenomenally apparent to us that this is so. When it comes to proprioception, upon reflection, the same structure reveals itself. While, of course, one's legs Being Crossed is as objective and extramental a property as one might wish, when this property is targeted by somatosensation, it takes on the same phenomenal tone we are ready to recognise for pain. In this sense, not only Being Crossed^S is as intimately connected with our occurrent phenomenal experiences as Damage^S is, but also, I submit, so it seems to us.

What, then, about the concern that, on the face of it, what proprioception conveys is that one's body is some mind-independent way? As I see it, this expresses a folk intuition about the *transparency* of proprioception: when we feel our legs crossed, we are only acquainted with the legs themselves. One way of understanding this intuition about transparency is indeed that, in feeling one's legs crossed, it is *impossible* to attend to anything experiential without thereby attending to the crossed legs. This is, however, a strong reading of the transparency thesis (Kind 2003). On a weaker reading, in proprioception it is just *difficult* to attend to experiential features instead of attending to the body itself (ibid.). As far as I can see, there is no clear verdict as for which of the two readings of transparency is at stake in our intuitions about proprioception, and I do not think that there are principled reasons against the

weak reading. It might well be that, when undergoing a proprioceptive experience as of one's legs Being Crossed, one can uncover the corresponding Being Crossed^S property. In turn, there is no reason to think that the latter property does not belong to our ordinary phenomenal experience as of crossed legs even if, for the most part, it is not in the focus of attention.²⁰ I will therefore assume, going forward, that the argument from introspection we have just been considering does not endanger the thesis that the reflexive character of bodily sensations is phenomenally salient, not just for pains but beyond, to somatosensation in general.

Having addressed this issue, my current defence of Reflexivity will consist in pointing out what I take to be the main indicators of its appeal: firstly, the very fact that it is a way of cashing out the subject-involving character of somatosensation – and, therefore, a way of specifying the SBO in experientialist terms. Secondly, the fact that it cashes out the subject-involving character of somatosensation by binding the SBO to the SEO – which is independently desirable. In the remainder of this section I unpack these points in turn, hence discussing condition (2) above.

We have already noted how experience-dependence can be phenomenally salient, e.g. in sensations of pain, or in seeing “stars,” phosphenes, and afterimages. But as argued in 3.2. above, an experience making reference to itself (via the experience-dependent properties in its content) is not quite the same thing as an experience making reference to the experiencing subject, at least in principle: that certain visual properties, or certain pain properties, are perceived as dependent on token experiences does not yet warrant, in principle, the attribution of these properties, or the bodies that bear them, to the *subject* of the experiences. And yet, theorists tend to treat experience- and subject-dependence interchangeably in the literature on vision, suggesting a tacit identification of both concepts. For instance, in discussion of afterimages, Block (2010) talks about their apparent “*subjective unreality*.” Siegel herself uses the notion of *subject*-independence to talk about properties of objects that are instantiated independently of the specific perceptual *experiences* by which they are perceived – where subject-independence, or the lack thereof, informs our visual phenomenology (2010, 178). And resorting explicitly to the ownership terminology, O’Shaughnessy talks about pure sensations as of the blue sky as “something blue, psychological, and *one’s own*” (2000, 468. My emphasis).

The tacit identification between experience- and subject-dependence encapsulates a widespread assumption that is crucial at this point: there is, indeed, something subjective to experiences. Perceiving something as dependent on our experiences equates to perceiving it as dependant on *ourselves* because experiences are intimately linked to subjects, not only in the sense that, for experiences to occur, there need to be subjects that have them; but also, and most importantly, because in normal conditions phenomenally conscious experiences are subjectively marked: we take them to be *our own* experiences. In this sense, the phenomenal feel as of the dependance of certain perceived properties on the experiences that token them is, eo ipso, a *subjective* phenomenal feel (Serrahima 2022).

²⁰ On how non focal consciousness is consciousness proper – in fact, on how the structure centre/periphery is essential to phenomenal consciousness – see Watzl (2014).

The Reflexivity-based view on the SBO presented here, defined in terms of (1) and (2) above,²¹ exploits the phenomenal structure implicit in discussions of experience-dependent seemings to account for the fact that a body picked out in perception via apparently experience-dependent properties is experienced as *owned*.

For a detailed formulation of this idea, take again Dokic's Implicit Reflexivity:

IR: Experience (a particular body part is F) | where the perceived instantiation of F is constitutively dependent on this particular experience

Note that IR lacks, first, a recognition that the subject of this experience would describe it as "my experience:" the subject, that is, has a sense of ownership for the experience itself. As said, in normal conditions, one has a SEO for all the experiences one phenomenally undergoes, and bodily sensations are no exception to this: given a somatosensory experience as of, for instance, neck stiffness, the judgment paradigmatically expressed as "I can feel that my neck is stiff" will typically strike one as an accurate report of the relevant experience. Second, as argued, it also lacks a recognition that the reflexivity of somatosensory experience is present in its phenomenology – that the clause after the vertical bar makes a phenomenal contribution.

One obvious way to implement these additions to IR is what we could call *Explicit Reflexivity*: that bodily sensations be *explicitly* reflexive, in the sense that the experience-dependence of F be itself part of the content of the experience:

ER: Experience_M (a particular body part is F, where F is constitutively dependent on this very experience)²²

This might well be the best, perhaps the only, way to flesh out condition (1). In the current defence of Reflexivity, ER suffices to illustrate my general point. Because bodily sensations pick out a particular body (part) via properties dependent on *this particular experience*, the relevant body (part) figures in their content in virtue of its relation to a first-personally indexed entity, that is, *my* experience. Hence it makes sense, on the grounds of an experience of the type defined in ER, to talk about the relevant body (part) as *mine*: the content of the experience is *owned* because it is experienced to stand in a peculiar relation to the perceiving subject, by standing in a peculiar relation to *her own* psychological states.

As seen above (i.e. in Siegel 2010; Block 2010; and O'Shaughnessy 2000), expressions of this sort of phenomenal structure in terms that describe an intimate relationship between the things perceived and the subject – such as a dependance relation of the perceived on the subject, or even explicitly the subject's ownership over the perceived – are quite common in the context of visual perception. ER breaks down the intuition of subjectivity behind those claims, and leverages it for the case of bodily sensations: the properties, and the

²¹ To recall: (1) The reflexivity of sensations must be *phenomenally salient*, so that being aware of my body as my own *just is* being experientially aware of the reflexivity of my bodily sensations; and (2) We must factor in that, in normal conditions, we take the experiences we are phenomenally conscious of as our own.

²² Here the M subscript means that the subject has a sense of ownership over that experience.

bearers of the properties, that are experienced to depend on acts of perception, are experienced as *ours* because of the nature of experiences. This is the case of the somatosensorily perceived body.

Importantly, episodes of visual perception that have this structure are, at most, the odd ones – i.e. “seeing stars”, phosphenes, or afterimages. However, I have suggested, episodes of somatosensation have this structure typically. This has the implication that, unlike Dokic’s Implicit Reflexivity, ER does not generalise to ordinary exteroceptive experiences, in particular ordinary visual experiences as of external objects. For one might defend that some visual properties, such as colour properties, are actually response-dependent (e.g. Shoemaker 1994, 2000; Egan 2006), in the sense that their instantiation depends on their being perceived. But even so, it is a fact that, typically, these properties do not *seem* response-dependent to the perceiver. Rather, they seem to be objective properties of the external things perceived.²³ Hence, ordinary visual experiences do not meet condition (1) above: on my view, the alleged experience-dependence of colours wouldn’t imply that we have a sense of ownership for all coloured objects we see because, in any case, the experience-dependence of colours would typically not be phenomenally salient to us as perceivers.²⁴

In sum, in this section I have defended a version of Reflexivity that allows to bridge the gap between experience- and subject-involving contents in somatosensation. To conclude this section, I will stress how binding an explanation of the SBO to the SEO, as this view does, is independently desirable.

The idea of there being explanatory relations between the SBO and the SEO has been sometimes vindicated in the literature on the SBO (Billon 2017; Bermúdez 2018b). I submit that securing these explanatory relations should actually be a desideratum for theories in this domain. If I claim “I can feel that my neck is stiff,” the individual of whom I intend to say, on the basis of the single token mental state of feeling a stiff neck, both that she has a proprioceptive experience and that she has a stiff neck, is one and the same, namely myself. More generally, the mental and bodily self-attributions that typically can be articulated in judgments of somatosensation, which correspondingly involve (variants of) the first-person pronoun, finally are attributions to a single individual, granted that the pronoun is used consistently adequately. Several of the senses in which we say of subjects that they are self-conscious converge in bodily sensations: when a subject undergoes a bodily sensation, her mental and her bodily condition are disclosed to herself in an intertwined manner. It would be suspiciously redundant for an explanation of what it is for us to experience ourselves in somatosensation to proceed through two completely independent explanatory pathways.

²³ For classical discussion of this feature of the phenomenology of visual experiences from the point of view of response-dependent theorists, see e.g. Boghossian and Velleman (1989, 94) and Shoemaker (1994, 25). Note that, interestingly, Boghossian and Velleman’s (1989) discussion relies on what they find to be a contrast between colour sensations and pain sensations, in terms of how the former, but not the latter, appear as properties of the external objects causing the sensations.

²⁴ I am thankful to an anonymous reviewer for pressing me on this point.

5 Conclusion

The foregoing considerations conclude my defence of Reflexivity: the thesis that the SBO consists in the reflexive character of bodily sensations. In Section 3 above I mentioned how, within an experientialist framework, one might want to exploit the minimal components of bodily sensations for an account of the SBO – that is, the spatial and descriptive components of bodily sensations. Let me now add that one important motivation for defendants of this minimalist strategy is to abide by a principle of phenomenal parsimony: they categorically reject the thesis that the first person in the content of somatosensation has the status of a phenomenal primitive (Billon 2017; for an explicit rejection of this idea, see Bermúdez 2015, 38).

One common objection against the spatial version of this minimalist experientialism, however, has been to say that, although it spells out in detail how bodily sensations represent the body, it fails to characterise the sensations in a way that *fully* justifies their first-personal expression in judgment (Vignemont 2018, 2.4.; Bradley 2021; Serrahima *forthcoming*). Taking the SBO to consist in a phenomenal primitive certainly seems an effective way of blocking this sort of objection.

In this paper I have, on the one hand, spelled out what a full justification for judgments of somatosensation would consist in, within a full-blown experientialist framework: to have an *experience* of bodily ownership means that bodily sensations are subject-involving, in a way analogous to how canonical judgments of somatosensation are subject-involving. On the other hand, I have presented a novel way of cashing out the subject-involving character of bodily sensations. This shows the viability of the experientialist project, without postulating phenomenal primitives as part of the content of bodily sensations: Reflexivity exploits the descriptive component of bodily sensations, by focusing on the kinds of properties involved in them. This proposal, I have argued, brings in a unified account of self-consciousness in somatosensation, and a substantive interpretation of what it means to experience the body as subject.

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