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BODILY SELF-REFERENCE[1]

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The concept of reference has many applications across the cognitive sciences. In philosophy and linguistics, for example, it characterizes one relation in which a sign stands to an object. In this sense, naming is a paradigm of reference, as when the name "Julius Caesar" refers to Julius Caesar. By extension, computer scientists talk of pieces of data in one data structure referring to data in other structures when they give a way of accessing items in the second data structure (e.g. by specifying an address). These canonical usages are primarily symbolic, and seem to make sense only in the context of languages, whether natural languages or programming languages. In order to discuss bodily self-reference, however, we need a more inclusive notion of reference. We certainly do have linguistic and conceptual devices for referring to our own bodies body. But these devices are grounded in fundamentally non-symbolic, nonlinguistic, and nonconceptual ways of apprehending and experiencing the body – or so I shall argue. It is easier to see this if we work with a framework that is not tied to language and that allows for both conceptual and nonconceptual ways of referring to the body.

For the purposes of this chapter, therefore, I will be understanding the notion of reference somewhat differently. – not as an abstract relation, but as an activity, something that thinking subjects do. To refer to something, in the sense I am using, is to pick it out in a way that exploits or establishes a cognitive connection to it. I cannot refer to something that I cannot in some sense discriminate. At a minimum, this requires being able to single the thing out from its environment. This type of singling out can occur in many ways. It might involve a gesture (ostension). It could take place through various types of perceptual discrimination. Or it might involve making or understanding some sort of linguistic act.

The idea that reference exploits or establishes a cognitive connection is intended to emphasize that it involves more than being able to respond to what is being referred to. For me to refer to an apple in a bowl of fruit it is not enough that I be able reliably to select the apple when prompted. I also need to be aware of it in a way that impacts and interacts with other aspects of my cognitive life – as something nice to eat, for example. The cognitive connection can take many other forms. For example, it might involve being able to keep track of the apple as it moves over time. Or the capacity to act upon it. Another, more sophisticated variety of cognitive connection would be the ability to ascribe various properties to it, either linguistically or in thought.

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Terms such as "singling out" and "cognitive connection" are theoretically loaded and theoretically contested. My aim in this chapter is to elucidate them in the specific context of *bodily self-reference*. By "bodily self-reference" I mean the general capacity that we have, and that we share with many other types of sentient being, to discriminate our bodies as distinctive objects in the world. In virtue of this general capacity, which has multiple facets, we are cognitively connected to our bodies in ways that inform most, if not all, aspects of our cognitive and affective lives. This cognitive connection to our bodies is an integral part of our being aware of ourselves as embodied subjects.

This chapter develops an account of bodily self-reference at the nonconceptual level, that is, as a primitive capacity that is shared with various types of nonlinguistic creature, as well as with prelinguistic creatures. Bodily self-reference is a key part of what I have elsewhere called nonconceptual self-awareness.[2] It is more primitive than the conceptual ways we have of referring to our bodies and to ourselves as embodied. Section 1 sketches out the general distinction between conceptual and nonconceptual content and points to some reasons for thinking that possession of the first-person concept is an ability that depends upon participation in a public language. In section 2 I argue that there is a significant gap between possessing self-specifying information about one's body and being in a state with genuine first-person content. In section 3 I suggest that bodily self-reference is key to bridging that gap, while in section 4 I develop an account of bodily self-reference, drawing on the work of Gareth Evans, on which it involves calibrating two fundamentally different ways of thinking about the body as an object. Bodily self-reference is a matter of being able to think about the spatial location of one's body both egocentrically and allocentrically simultaneously – an ability that can be manifested conceptually, but need not be.

1.1 Conceptual and nonconceptual dimensions of bodily self-reference

As I am taking it in this chapter, to refer to something is to pick it out in a way that establishes a cognitive connection to it, or exploits an existing cognitive connection. This cognitive connection is typically manifest in some sort of cognitive or affective state. In central cases, this cognitive or affective state will represent the world as being a certain way. The way in which the cognitive or affective state represents the world is standardly termed its *content*. The way I propose to approach the topic of bodily self-reference is through the content of the states that manifest the cognitive connection it establishes.

The notion of content has been the subject of much discussion and controversy, but for present purposes I want to focus primarily on a distinction between two fundamentally different types of content – conceptual content vs. nonconceptual content.[3] Contents that are conceptual are available only to subjects who possess all the concepts required to specify them. To see the intuitive idea here, consider the absurdity of attributing to someone the thought that inflation lowers the purchasing power of money if they have no understanding of inflation, money, or purchasing power. Economic thinking is not available to creatures who lack the basic concepts of economics. Some theorists have taken the extreme view that all contents are conceptual, so that all capacities for representation are constrained by the concepts that the subject possesses. It has become increasingly popular, however, to hold that some contents are nonconceptual. Nonconceptual contents are ways of representing the world that can be had by, and attributed to, subjects that lack the concepts required canonically to specify them. We might use to concept *prey*, for example, to make sense of an animal's behavior, even though the animal might lack anything approaching mastery of that concept. We might do so in cases where animal's behavior appears to have enough in common with behavior driven by conceptual thinking to be best explained through a mode of thinking that is a primitive precursor of that conceptual thinking.

To get a fix on how this distinction might apply in the case of bodily self-reference, consider a typical content that involves bodily self-reference and that would be specified using the first-person pronoun "I" (which I am taking to include associated forms, such as the accusative "me" or the possessive "my"). Consider the first-person content

(1) My leg is damaged,

made on the basis of pain sensations and/or a visual inspection. If bodily self-reference is conceptual, then (1) is available only to creatures that possess the first-person concept **I** (as well as the concepts **arm** and **– is damaged**, of course). If, on the other hand, bodily self-reference is nonconceptual, then there are circumstances in which it would be correct to attribute (1) to a creature even though they lacked the first-person concept.

There is a subtle and important issue in play here. To attribute a content specified using the first-person pronoun "I" is to attribute a significant degree of self-awareness and self-consciousness. It implies that the subject to whom the content is being attributed is aware of herself as herself, in a manner fundamentally different from how she is aware of other objects in the world. To say, therefore, that first-person contents are nonconceptual is to say that there can be self-awareness without mastery of the first-person pronoun or concept. In brief – there can be first-person contents without first-person concepts.[4]

This idea would not be accepted by someone who thinks that there is no gap between possessing the first-person concept and being correctly attributed contents such as (1). At a minimum, therefore, we need to be able to characterize what it is to possess the first-person concept and what it is to be in a state with a first-person content in a way that opens up the possibility of such a gap. We need theoretical room to settle the question of whether or not subjects possess the first-person concept independently of whether or not they can be correctly attributed first-person contents.

One avenue for developing such an independent characterization of the first-person concept would be to stress its connection to linguistic mastery of the first-person pronoun, so that there would be a purely linguistic criterion for possession of the first-person concept. So, for example, one might identify the first-person concept with the sense of the first-person pronoun. The notion of sense, as it is understood within the Fregean tradition in the philosophy of language, does double duty. On the one hand, senses are invoked to explain linguistic understanding and related phenomena. On the other they serve as the constituents of thoughts. So, this would be a natural maneuver.

It is true that some theorists who adopt this general approach hold that the first-person concept is explanatorily prior to the ability to use and understand the first-person pronoun.[5] This is in many ways an appealing thought, capturing as it does the intuition that the first-person pronoun is a tool for expressing and communicating first-person contents. But still, the claim that the first-person concept is explanatorily prior to the use of the first-person pronoun does not entail that it is completely independent of participation in a public language. It could be the case, for example, that the first-person concept is constitutively dependent upon language use in another way.

One plausible line of argument here would be to stress the interpersonal dimension of the first-person concept. A theorist might stress, for example, that fully grasping the first-person concept must be non-solipsistic. Grasping the first-person concept requires understanding that other subjects can also use it to think about themselves – the first-person concept is a concept that *any* thinker can use to think about themselves, just as the first-person pronoun is a linguistic device that any speaker can use to refer to themself. And this, arguably, is something that can

only be grasped in a linguistic context, by understanding someone else's self-referential speech. Relatedly, the first-person concept seems to be coeval with the second-person concept, so that my being able to refer to myself in thought requires that I be able to appreciate that someone else can think about me in the second-person way – and, moreover, that the first-person and second-person thoughts are intimately connected (so that my "I"-thought can contradict your "you"-thought). Again, arguably, this is something that can only emerge in a linguistic context, when "you" is being used as a form of address.

There is a case to be made, therefore, that a full understanding of the first-person concept is language-dependent in a sense that makes it in principle unavailable to nonlinguistic subjects. That opens up the gap mentioned earlier between the first-person concept and first-person contents, which in turn opens up theoretical space for the possibility of nonconceptual first-person contents, and nonconceptual bodily self-reference. The next section will start to define this theoretical space more precisely.

1.2 The limits of self-specifying information

There are certain basic requirements on any form of nonconceptual first-person contents and nonconceptual bodily self-reference. At a minimum, subjects need to be in receipt of self-specifying information about their own bodies, including some, or all, of the following:

- proprioceptive information about how the body, and individual body parts, are disposed
- kinesthetic information about the movement of the body as a whole, as well as the movement of individual limbs
- vestibular information about the body's orientation relative to gravity
- afferent and/or efferent information about self-initiated movements
- interoceptive information about the state of bodily systems that permit homeostasis
- information from nociceptors about damage to bodily parts.

It is equally clear, however, that these conditions are necessary but not sufficient. Spiders receive information about damage to one of their legs, but that is not ground for attributing to them the thought:

(1) My leg is damaged

Nor is being able to act on the basis of the relevant self-specifying information sufficient to warrant attributing (1). Spiders are very good at that – they can compensate with other legs, for example, while they wait for irremediably damaged legs to molt and regrow. But none of this seems to betoken genuine self-awareness, of the sort that might plausibly be attributed, for example, to a young child exploiting the fact that their body is the object of a caregiver's attention in pretend play or joint attention – or to a primate exploiting a conspecific's line of sight to deceive them. So, how do we get from the ground-level capacities of receiving and acting upon self-specifying information to true first-person contents?

Much has been made in the literature on first-person contents of the idea of information that is immune to error through misidentification relative to the first-person pronoun.[6] The basic idea is that certain forms of information come from information channels such that they could not possibly be about anybody but the subject. To receive information through one of these information channels that someone has a certain property F is *ipso facto* to receive the information that one is oneself F, so that there is no possibility of correctly recognizing that

someone is F while failing to realize that that person is oneself. This means that there is no need for any explicit identification of the subject herself as the person who is F (and therefore no possibility of an error of *mis*-identification). All six of the forms of information, and associated information channels, just identified have the immunity property, however. So, simply being in receipt of such information through the relevant information channels cannot be sufficient for first-person self-reference.

Perhaps it is enough for this awareness of one's body as one's own that one's body be an object for which one has a special concern, in the manner emphasized by Locke as part of his theory of personal identity? In an important passage in his *Essay Concerning Human Understanding*, Locke points out that the embodied self is coextensive with a particular type of conscious concern:

> [t]hat this is so, we have some kind of Evidence in our very Bodies, all of whose Particles, whilst vitally united to this same thinking conscious self, so that we feel when they are touch'd, and are affected by, and are conscious of good or harm that happens to them, are a part of our *selves*: *i.e.* of our thinking conscious *self*. Thus the Limbs of his Body is to every one a part of *himself*: He sympathizes and is concerned for them. Cut off an hand, and thereby separate it from that consciousness, we had of its Heat, Cold, and other Affections: and it is then no longer a part of that which is *himself*, any more than the remotest part of Matter.
>
> *Locke (1689) 1975: 336*

Lockean concern is very closely bound up, of course, with the self-specifying information channels just discussed. We are "conscious of good or harm" that happens to the body through information channels with the immunity property (e.g., via interoception or nociception).[7]

Still, it is important to note that Locke is primarily making a metaphysical point here, however. He observes that "our conscious, thinking, self" extends throughout those bodily regions of which we are consciously aware and for whose well-being we are directly and strongly concerned. That is different from saying that having a direct and strong concern for one's body brings with it awareness of one's body as one's own. And it is hard to see how we might get directly from the former to the latter. Having body-specific concern would seem to be an immediate consequence of having any sort of bodily sensations, and surely simply having bodily sensations cannot be sufficient for being in states with first-person contents.

This basic point can be generalized. Here is a table with a range of different types of self-specifying information in the LH column, and correlative forms of first-person content in the RH column.

Forms of self-specifying information	*Forms of first-person content*
Receiving proprioceptive, kinesthetic, and vestibular information about the disposition and configuration of one's body and individual body parts	Being aware of oneself as an embodied entity moving through the environment
Receiving information about one's own actions	Being aware of oneself as an agent
Receiving tactile information about the limits of one's body	Being aware of oneself as a bounded physical object
Receiving nociceptive and interoceptive information about one's body	Being aware of one's body as a special object of concern
Receiving information through episodic memory about past experiences and encounters	Being aware of oneself as an entity persisting over time

All of the forms of information in the LH column are self-specifying in direct and immediate ways. They all come from information channels that are immune to error through misidentification. There is no question about their direct relevance to the self and subjects will typically act upon them immediately. It is clear that an integral part of being a self-conscious subject is being disposed to take these information-sources as being directly relevant to oneself. On the other hand, however, it is equally clear that many subjects that are completely lacking in self-consciousness will have precisely those dispositions.

There is a clear divide, therefore, between self-specifying information and genuine first-person contents. The challenge is to explain how that gap can be bridged. In virtue of what, for example, does information about one's own motor behavior become an awareness of oneself as an agent? Or how does information from the sense of touch about the limits of one's body become incorporated into an awareness of oneself as a bounded physical object?

In the next section I turn to a notion of bodily self-reference that both serves as the bridge between the LH and the RH columns, and counts as nonconceptual in the sense identified in section 2 above.

1.3 The role of bodily self-reference

Consider the properties corresponding to the types of self-specifying information we have been discussing – e.g., the property of being hungry, or of losing one's balance. Being in receipt of the relevant self-specifying information puts the thinker in a position to identify the presence of those properties – to detect the presence of hunger, for example, or of being out of balance. This brings with it the capacity to respond to those detected properties – e.g., by seeking food, or by restoring equilibrium. But the capacity to respond in those ways requires no more than sensitivity to the presence of the relevant property. It does not require thinking of the property as instantiated in an object – and certainly not taking that object to be one's self.

Here is a way of formulating that distinction more precisely. If we were (somewhat artificially, it is true) to report the representational state of a creature capable only of receiving self-specifying information we could do so *holophrastically*. That is, we could characterize the content of such states using single words or expressions that lack any sort of articulation or structure. E.g.,

(2) Hunger!

or

(3) Out-of-balance!

There is nothing in holophrastic utterances that corresponds to the linguistic act of predication, to the act of applying a predicate to an object.[8] By the same token, there is nothing in the representational content of a creature restricted to self-specifying information that corresponds to thinking that a property holds of a particular object.

In (2) and (3) "hunger" and "out-of-balance" are not functioning as predicates that express concepts of the relevant properties. In very general terms, predicative representations can be applied to multiple objects, and their role in thought is to combine with ways of representing objects in order to represent states of affairs. The resulting thoughts can be true or false. Holophrastic thought-constituents do not function in anything like this way. They are much more like exclamations (which is why I have added exclamation marks in (2) and (3)). They

register the presence of certain properties in a way that is closely, probably inseparably, tied to self-directed action. Their accuracy is measured pragmatically, in terms of the success of the self-directed behavior to which they give rise, rather than representationally, in terms of truth/falsity.[9]

If this is right, then self-specifying information alone cannot support a level of thought that is more complex than the holophrastic. The explanatory challenge, therefore, is to explain the movement from the pragmatic realm of holophrastic representation to the representational realm of truth-evaluable content. This is the movement from, e.g.,

(2) Hunger!

to

(4) I am hungry.

We can see this movement as involving two interconnected steps. The first step is the transformation of the exclamation *Hunger!* into a content-constituent corresponding to – *is hungry*. The second step is the emergence of a subject for that content-constituent – the appearance in thought of something to which hunger is ascribed. These two steps will take us to the realm of first-person content – although not, I shall argue, into the realm of *conceptual* first-person content.

One promising candidate for what this subject might be is the body, or, more accurately, the bodily self. After all, it is to the self qua embodied that hunger is ascribed. It is the self *qua* embodied whose parts and limbs are distributed a certain way. It is the self *qua* embodied that is in pain. It is the embodied self that is remembered as having behaved a certain way, or been at a certain place. And so on for the other forms of information in the LH column in our table. If the embodied self is the subject of non-holophrastic self-ascriptions, then it seems compelling that bodily self-reference is required for the move to truth-evaluable first-person content.

There are important metaphysical issues to be explored about the modal relation between bodies and selves/subjects. This is not the place to go into them, however. The topic of bodily self-reference is plainly of interest only in the context of selves/subjects that are *actually* embodied. Whether that embodiment is contingent or necessary is, I believe, orthogonal to the question of what bodily self-reference is, and how it takes place, when it does take place.

What we need to explore, therefore, is how the embodied self becomes (in thought) something to which, e.g., hunger can be ascribed. If we go back to the general characterization of (self-) reference, self-specifying information (even with the immunity property) seems to fall short of genuine reference in two respects. It does not, first, involve *singling out* the body. And second, for that very reason, it does not establish a *cognitive* connection to it. Conversely, though, if we were to possess an account of how the body is singled out in thought in a way that establishes a cognitive connection to it, then we would have a plausible candidate for bridging the gap between holophrastic contents and genuine first-person contents. The next section will explore the basic elements of such an account.

1.4 Bodily self-reference and first-person contents

A good place to start in thinking about bodily self-reference is with some extremely insightful remarks from Gareth Evans's discussion of self-identification in *The Varieties of Reference*. Evans was one of the first philosophers to call attention to what I am calling self-specifying information,

emphasizing that it is derived from information-sources that have the property of immunity to error through misidentification. But he also stressed the gap between self-specifying information and genuine first-person contents (although he did not put it in quite those terms). Here is a passage in which Evans points out some of the problems of trying to build an account of the first person solely on sensitivity to self-specifying information.

> Indispensable though these familiar ingredients (an information component and an action component) are in any account of the Ideas we have of ourselves,... they cannot constitute an exhaustive account of our "I"-ideas. So long as we focus on judgments which a person might make about himself on the basis of the relevant ways of gaining knowledge, the inadequacy may not strike us. A subject's knowledge of what it is for the thought "I am in pain" to be true may appear to be exhausted by his capacity to decide, simply upon the basis of how he feels, whether or not it is true – and similarly in the case of all the other ways of gaining knowledge about ourselves. However, our view of ourselves is not Idealistic: we are perfectly capable of grasping propositions about ourselves which we are quite incapable of deciding, or even offering grounds for. I can grasp the thought that I was breast-fed, for example, or that I was unhappy on my first birthday, or that I tossed and turned in my sleep last night, or that I shall be dragged unconscious through the streets of Chicago, or that I shall die.
>
> *Evans 1982, 208–209*

Here is a way of translating Evans's basic point into the terms I have been using. Sources of self-specifying information do indeed put us into a limited form of cognitive contact with our own bodies. But it is a form of cognitive contact that is exhausted, as it were, in the here and now, in its immediate implications for action and reaction. It does not bring with it any conception of an independently existing object – an object that could have properties transcending the here and now, as in the examples that Evans gives.[10] In other words, sensitivity to self-specifying information does not give the thinker a way of singling out the body, because singling the body out involves more than receiving information about it and responding differentially to it.

Evans's fundamental insight is that genuine first-person thought requires a way of thinking about the body as an object in a much richer sense than as the source of, say, proprioceptive, interoceptive, and nociceptive information. This richer sense of thinking about the body as an object is, I suggest, what makes possible the move from holophrastic contents to genuine first-person contents. But how is this objectivity requirement satisfied? What is it to single one's body out in this way?

In the chapter in self-identification in *The Varieties of Reference*, Evans proposes an account of what it is to think objectively about one's body that is derived from his more general account of the nature of conceptual thought. He thinks that it is a requirement upon thinking about any object that one know which object it is that one is thinking about. This is what he calls *Russell's Principle*. In the case of the first-person concept, Evans thinks that Russell's Principle requires being able to grasp identities of the form $\mathbf{I} = \delta$ where δ is a placeholder for an arbitrary way of thinking about a person. So, for example, to have an objective grip on oneself is to be able to understand, and know how to go about deciding the truth-value of, identities of the form **I am Julius Caesar** or **I am the man in the mirror**.

Whatever the merits of Russell's Principle as a universal constraint upon genuine referential thought, it seems clear that Evans is here only giving a *criterion* for what it is successfully to have singled oneself out, since being able to single oneself out in the first-person way is required for being able to determine the truth-value of these identities. So, the question remains open of

how the singling out actually takes place. Moreover, to go back to the distinction between conceptual and nonconceptual content raised in section 2, Evans's criterion still seems to leave us squarely in the realm of the conceptual. As his emphasis on *arbitrary* identities shows, he is elucidating what it is to possess a full-fledged and completely generalizable first-person concept.[11]

These points raise two questions. First, can we give a non-circular account of what it is to single one's body out in the first-person way (i.e. one that does not make explicit reference to "I"-thoughts that themselves depend upon precisely the capacity of self-reference that we are trying to explain)? Second, can this non-circular account be situated at the nonconceptual level, in ways that do not make it language-dependent?

Evans himself points to a central pillar of such an account in his discussion in Ch. 6 of *Varieties of Reference* of thinking that exploits demonstrative notions such as ***here***. Although he only briefly refers back to this earlier discussion in the chapter on the first-person, it is clear that Evans thought that "I"-thoughts and "here"-thoughts are inextricably connected, with neither being reducible to the other.[12] The discussion of the two modes of indexical thinking proceeds largely in parallel. We have already observed that Evans holds that genuine first-person thought requires more than the information-links that hold between an individual and his body in virtue of the various types of self-specifying information that we have been discussing. He makes exactly the same observation about ***here***. There must be more to thinking about a place as ***here*** than simply being sensitive to information from the place where one happens to be, because a subject could perfectly well receive and act upon such information without being able to locate the placer where he happens to be. Once again, Russell's Principle is driving the argument, by imposing the requirement that the subject know *which* place he is thinking about as ***here***. And, Evans plausibly argues, in order to know which place one is thinking about a thinker needs to be able to *locate* it, where this involves more than simply receiving information from it or acting in relation to it.

Evans has a very interesting suggestion for what counts as thinking about a place as ***here***. It hinges on a distinction, commonly made by psychologists and cognitive scientists, between two different ways of thinking about space and spatial location. Spatial thinking takes place relative to a frame of reference, and frames of reference fall into two broad categories. They can be egocentric, on the one hand, or allocentric, on the other. An egocentric frame of reference is centered on the subject's body. It might be hand-centered, for example, or centered on the head. Egocentric frames of reference are perspectival, in the sense that they are anchored in the subject's capacities for perception and action.

An allocentric map, in contrast, is centered on some non-bodily object, such that the spatial relations between objects on the map are completely independent of the subject's movements and perceptions. Allocentric frames of reference support objective conceptions of space, rather than a conception of space tied to the subject's own perspective. In psychology and cognitive science, being able to think of one's environment relative to an allocentric frame of reference is often described as having a *cognitive map of the environment*.

Evans's fundamental insight about spatial location is that it requires calibrating one's egocentric spatial perspective on the world with an allocentric way of thinking about space (i.e. a cognitive map). Here is how he makes the connection between spatial location and self-identification:

> It seems to me clear that as we conceive of persons, they are distinguished from one another by fundamental grounds of difference of the same kind as those which distinguish other physical things, and that a fundamental identification of a person involves a consideration of him as the person occupying such-and-such a spatio-temporal

> location. Consequently, to know what it is for [™ = I] to be true, for arbitrary ™, is to know what is involved in locating oneself in a spatio-temporal map of the world.
>
> *Evans 1982, 211*

Looking back at the chapter on demonstratives provides the tools to flesh out the proposal:

> A thought about a position in *egocentric* space (including the utterly non-specific *here*) concerns a point or region of *public* space in virtue of the existence of certain indissolubly connected dispositions on the part of the subject, to direct his actions to that place and to treat perceptions of that place as germane to the evaluation and appreciation of consequences of the thought. This dispositional connection with a place rests upon a vastly complex network of links between perception and action which allows us to speak of the existence of a unified egocentric space, and in this context, the subject may be said to have an adequate Idea of a point in public space in virtue of his general capacity to impose a conception public space upon egocentric space.
>
> *Evans 1982, 168*

Putting these two ideas together yields the following account of bodily self-reference. Thinkers single their bodies out to the extent that they are able to calibrate two very different ways of thinking about the spatial location of their bodies – the egocentric way of thinking, which is inextricably linked to perception and action, and the allocentric way, which is based on a perspective-independent representation of spatial relations.

What are being calibrated here are, in effect, two different ways of thinking about the body as an object. Relative to the allocentric way of thinking, the body is conceived as a one object among others, a physical object in the world that stands in exactly the same type of spatial relations to other, non-bodily objects as they stand to each other. Relative to the egocentric way of thinking, the body is conceived as an object of a very distinctive type, as a locus of perception and action and as the origin of a distinctive point of view on the world. These two ways of thinking about the body map onto a number of familiar oppositions. The egocentric way of thinking about the body is perspectival, subjective, and experiential, while the allocentric way is non-perspectival, objective, and reflective.

Going back to the contrast drawn in section 1.2, my proposal, building on Evans's basic insight, is that it is this ability simultaneously to think about the body in these two ways that serves as the bridge between self-specifying information in the LH column and genuine first-person contents in the RH column. In virtue of this general ability for self-location, the subject has a conception of the body as an object and hence as something to which the various types of self-specifying information can be anchored and attributed. But, at the same time, this is a distinctive type of object, in virtue of the experiential and perspectival dimensions of the egocentric frame. This possibility for anchoring is the specific cognitive contact characteristic of bodily self-reference. It yields the bodily self as an explicit subject for the self-attribution of self-specifying information. Providing a subject in this way makes possible the move from the holophrastic level of representation to genuinely truth-evaluable content, as illustrated in Figure 1.1.

Bodily self-reference understood in this way brings with it a distinctive form of self-awareness. Boyle 2018 develops a useful framework for explaining how this works. She distinguishes subjective self-awareness from objective self-awareness. She explains subjective self-awareness in a way very similar to the discussion above of self-specifying information. It depends upon sources of information that are immune to error through misidentification. It is intrinsically motivational and feeds directly into action. But it does not bring with it, or depend upon, any

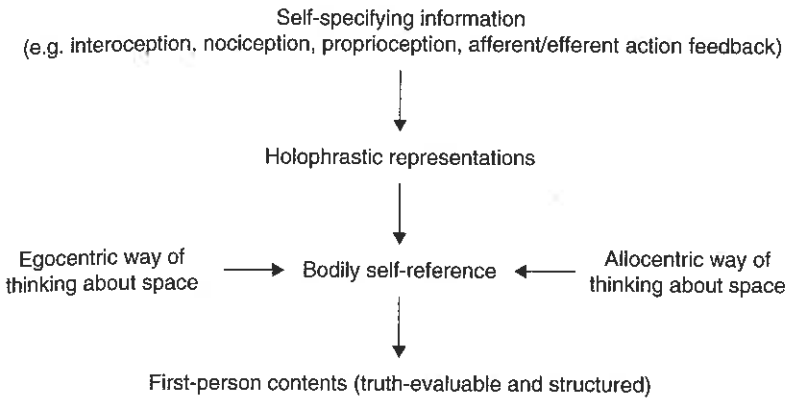


Figure 1.1 The role of bodily self-reference in enabling first-person contents

information about the type of thing one is, which comes only with what Boyle calls objective self-awareness. This more sophisticated type of self-awareness involves identifying oneself with an independently identified object in the world, which in turn requires thinking of oneself as a particular kind of (embodied) thing.

Thinking about this more general characterization of objective self-awareness brings out why Evans's account is so insightful. There are, of course, many ways in which one might identify oneself with an independently identified object in the world, because there are many possible ways of thinking about that independently identified object. This particular embodied self is also an independently identifiable philosophy professor, for example. But it seems very plausible that none of these identifications would be possible without the basic self-location ability that Evans emphasizes. The same holds for what might seem to be completely different models of objective self-awareness. John Campbell, for example, has emphasized the centrality for objective self-awareness of grasping one's own causal powers and how those powers mesh with the objective causal structure of the world. Important though this is, it cannot be fundamental, however. It is hard to see how this type of causal understanding would be available to any subject incapable of mapping egocentric and allocentric ways of thinking about space onto each other.

A final point of clarification. It is not my view, and I do not believe that it was Evans's view, that no subject can entertain a first-person thought unless they are, at that very moment, capable of locating themselves allocentrically. Someone who has been kidnapped and placed while anesthetized in a sensory deprivation chamber can perfectly well wake up and think: Where am I? But the very question "Where am I?" is in effect a request for a mapping of egocentric space onto allocentric space (which is why "Here!" is not a satisfactory answer). That request only makes sense against the background of a more general ability to carry out such a mapping. The proposal is one about the cognitive economy and general cognitive abilities of a subject capable of bodily self-reference, not about what must take place in every successful instance of bodily self-reference.

Let me return now to the distinction between conceptual and nonconceptual forms of bodily self-reference raised in section 1. There is, I argued, a gap between the first-person concept and first-person contents (because it is plausible that full mastery of the first-person concept requires abilities and modes of thought that are language-dependent, while first-person contents seem available to nonlinguistic creatures). For that reason, I suggested, it would be

highly desirable to have a conception of bodily self-reference that allows for nonconceptual and nonlinguistic self-reference.

The desired result falls nicely out of the account I am proposing of bodily self-reference (although Evans's own account of self-identification appears to have been firmly fixed at the conceptual level). The capacity to calibrate egocentric and allocentric is a capacity that will come in degrees, depending upon the extent and sophistication of the cognitive map that is brought into play. It may well be that there is a level of allocentric thinking about the world that is only available at the linguistic and conceptual level (perhaps because it requires socially constructed and transmitted forms of cartographic representation, such as drawn maps), but on the other hand there certainly do seem to be more restricted forms of cognitive map – restricted in terms either of their extent or in terms of the richness of the spatial relations that they represent.

Recognizing that bodily self-reference comes in degrees opens up exciting theoretical possibilities, and concomitant challenges. The key idea driving my account of bodily self-reference is that it brings into play a conception of the body as an object, so that self-specifying information can be represented as being about oneself in a genuinely contentful (as opposed to holophrastic) way. It seems likely, therefore, that there will be multiple different levels of self-awareness correlated with different levels of sophistication in self-location. Plotting these out will be an important and difficult task.[13]

Related topics

Bodily awareness without the body; Not a sailor in his ship: Descartes on bodily awareness; Peripersonal space (PPS); Developmental origins of bodily awareness; Body scaling of visually perceived metric space

Notes

1 I am grateful for detailed and thoughtful comments from two anonymous reviewers and a student reader, as well as from the editors.

2 E.g. in Bermúdez 1998 and the essays collected as Bermúdez 2018.

3 The distinction between conceptual and nonconceptual content has been extensively discussed. Many of the pioneering articles are collected in Gunther 2003. For an overview of the debate and references to more recent contributions see Bermúdez and Cahen 2018.

4 The basic theme of nonconceptual first-person content is developed in different ways in Bermúdez 1998, Peacocke 2014, and Musholt 2015.

5 This is the approach taken in Evans's *The Varieties of Reference*, to be discussed further below, and in Bermúdez 2016.

6 The concept of immunity to error through misidentification was introduced in an important paper by Sydney Shoemaker (Shoemaker 1968), drawing on ideas in Wittgenstein's *Blue and Brown Books*. For further discussion see Ch. 8 of Evans 1982 and the essays in Prosser and Recanati 2012.

7 See de Vignemont 2018 for a broadly Lockean model of bodily self-awareness.

8 This is so even in the case of information about the limits of one's body, which might initially seem to be a counterexample. The holophrastic report might be "Me!" or "Not-Me!", where "Me" is understood in a thin sense, perhaps to be understood as a form of subjective self-awareness, in the terminology helpfully introduced in Boyle 2018 (for more on which see below).

9 It is true that, in a suitably sophisticated linguistic context, holophrastic contents can function as abbreviations and so have truth values derivatively. It seems a stretch, though, to read such derivative truth-evaluability into purely holophrastic contents.

10 This is so even in the case of episodic memories. In order for episodic memories to yield a conception of the subject as existing over time they need to be integrated into a personal history or narrative, which in turn seems to require other sophisticated cognitive abilities, such as an understanding of how

earlier events causally influence later ones. For more on all this see Campbell 1994 and Bermúdez 2016 Ch. 7.

11 For Evans the connection comes via the idea that it is a constraint upon concept possession that concepts be grasped in a fully generalizable way, so that, for example, a subject who grasps a predicate concept **F(–)** would need to be able to grasp the thought **F(*a*)** for every object *a* about which he can entertain a thought. This is what Evans terms the Generality Constraint. It should be clear that the space I proposed opening up in section 2 for a nonconceptual form of bodily self-reference potentially violated the Generality Constraint (e.g. by not requiring the self-referring thinker to be able to appreciate that others can self-refer). For more discussion of the Generality Constraint see Evans 1982, Ch. 4, Peacocke 1992 Ch. 2, and (in connection with the conceptual/nonconceptual distinction) Beck 2012.

12 See Evans 1982, p. 155, for example.

13 I made a start on this task in *The Paradox of Self-Consciousness* (Bermúdez 1998), but the massive upswing in research on the body, the self, and representations of space in the intervening 25 years or so make a revision and update sorely needed. See also Peacocke 2014 and Musholt 2015.

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