The Content of the Body Representations that Guide Everyday Action

Luis Alejandro Murillo Lara

Abstract: In this paper, I argue that activities as crossing the road, riding a bike or going through a door involve body representations with non-conceptual mental content. Firstly, I discuss some key objections to the notion of body representations for action, in order to draw out their main consequences. Then I introduce an approach to the content of body representations involved in the guidance of everyday action, which seems to satisfy crucial demands in exchange for moving away from conceptual views on mental content. I conclude by discussing a potential objection to that proposal and presenting some thoughts on the relationship between conceptual and non-conceptual content in this field.

Keywords: Action; body representations; Merleau-Ponty; non-conceptual mental content.

1. Introduction

The notion of body representation has been at the center of a long-held controversy that has involved cognitive scientists, phenomenologically-oriented theorists and philosophers of mind. One of the essential points in this

*   Universitaria Agustiniana
    ✐   Universitaria Agustiniana, Avenida Ciudad de Cali No. 11b-95, 110821, Bogotá, Colombia
    ✉   luisalejandro.murillo@gmail.com

discussion is whether body representations are required for action. However, it is not at the level of actions that seem to result from explicit deliberation and reflection (i.e., choosing to be a philosopher, changing jobs, getting married, buying a house, etc.) that the notion of body representation raises most quarrel. The debate rather revolves around the kind of activities we perform all the time in our everyday lives: crossing the road, riding a bike, going through a door, etc.

Do we need body representations to perform these kinds of everyday actions? Are we actually forced by certain considerations to dispose of those body representations? In this paper, I attempt to propose an answer to both questions. The goal of my argument will be to defend the claim that body representations are involved in the guidance of everyday actions by pinning down the specific structure their content must have. To that end, I begin by discussing some arguments against the notion of representation, focusing on some criticisms to the notion of body representation as well as to the claim that those representations guide everyday bodily action. Next, I draw out two consequences of those arguments, which constrain the claim I want to defend. Then, I concentrate my attention on the second constraint and outline an approach to the content of such representations that fully satisfies that constraint. Later, I consider a possible objection to the kind of specification I suggest to the proposed content and conclude with some remarks regarding the issue of the relationship between conceptual and non-conceptual mental content.

2. Some criticisms to the notion of body representation

The kind of approach used by cognitive scientists typically explains the way we find out about our bodies in terms of body representations. For instance, sometimes the distinction is made between a sensorimotor representation of the spatial properties of the body, used for the planning and control of action (the "body schema"), and another representation that is supposed to gather all body mental content not used for action (the "body image") (see, for instance, de Vignemont [2010]).

However, over the years, the general notion of representation and that of body representation in particular, as well as the idea that those

representations play a major role in the guidance of everyday actions, have received strong opposition. For instance, it has been called into question that the body can be represented in a way that captures the distinctive manner we find out about it (see Gallagher [2006]). Hence, the conclusion is drawn that in everyday actions there are not body representations. In addition, it is maintained that the notion of body representation weakens the role of the body itself in an explanation of actions, making the relationship between body and action unnecessarily mediated and indirect (see, for example, Sheets-Johnstone [2011]).

Authors as Hutto and Myin (2012) and Chemero (2009) have maintained that, instead of the possession of representations and representational content, cognition consists in appropriate behaviors directly driven by interactions with aspects of the environment. So, in their view, it is dynamic systems theory that provides the tools required to explain cognition in general (see also Beer [2000]; Port and Van Gelder [1995]; Thelen and Smith [1994]).

Both Hutto and Myin (2012) and Chemero (2009) address the reply coming from 'representation-hungry' problems (Clark 1998), which seem to force one to admit that some cognitive tasks require representations. According to Chemero (2009, 40), his approach is able to explain representation-hungry tasks (although, the example he provides is not particularly persuasive, and it is unclear that it leaves representations utterly out of the picture; see Chemero [2009, 40-42]). Meanwhile, Hutto and Myin (2012, 46-55) reply that those tasks might need characterization in dynamic terms, because the representational explanation is unable to capture all the requirements for successfully performing particular motor acts (which are tied to a unique and changing context). Even so, what follows from that consideration is that the representationalist account need to be supplemented by the dynamic one, not replaced by it.

One of Hutto and Myin's (2012) main criticisms to representationalism is that it resists naturalization. It is usually claimed that the minimal condition for a system to be representational is that some parts of it have the function to carry information, and other parts the function of using it to guide behavior. However, Hutto and Myin maintain that the only notion of information that is naturalizable is that of covariance, but that

representational content is seen as having additional properties that make it irreducible to covariance relations between states of affairs. Although they acknowledge that there are naturalistic attempts to account for representations (especially teleosemantics; Millikan [1989]), they counter that teleological explanations are extensional and to that extent it is unclear that they are able to accommodate the additional intensional properties of representational content. Nevertheless, Hutto and Myin seem aware that information conceived in terms of indication relations allows for intensional properties and is a naturalistic conception of information (Dretske 1988; Miłkowski 2015). About information as indication, however, Hutto and Myin do not say much (beyond expressing some general suspicion).

For his part, according to Chemero, neither we need representational explanations nor are they of much use when appealed to. On the one hand, the dynamical systems theory explanation, he claims, is a precise, general, counterfactual-supporting (whereby able to predict behavior) mathematical description of behavior, that "tells us everything *important.*" In other words, we have the complete story and there is nothing left to be explained. On the other hand, Chemero holds that representational explanations do not predict anything about the system's behavior that could not be predicted by the dynamical explanation alone, and they do not add much to our understanding of the system (see also Gallagher [2008, 364]).

Nonetheless, although Chemero speaks of the dynamical explanation in the present tense, he is aware that the full version of such an explanation is not available at the moment. When asking how far beyond minimally cognitive behavior that explanation can get, his answer is that this is an "open question" and that "only time will tell to what extent this will be possible." He even professes his optimism in saying "once one has mathematical covering laws for psychology, laws that predict the behavior of agents in their environments with great accuracy, there may be no need for teleological explanations in psychology." As enthusiastic as it may sound, it is reminiscent of the eliminative materialism; in fact, it seems to possess similar problems: its relation to folk psychology, its futurism (in this case, 'dynamical explanation's cross-fingered scalability'), its completeness, and so on. Thus, regardless of whether it will become an alternative to representationalism or not, currently it is not.

Now, doubts and suspicions specifically about the notion of body representation can be traced to the work of Maurice Merleau-Ponty (1945), one of the earlier critics of body representations. According to Merleau-Ponty, if the body were represented, it would become (for us) just another physical object (1945, 108). However, he continues, the body is (for us) what makes perception and cognition possible. It would follow that, given the way we experience it (i.e., *as what makes my perception and cognition possible*), the body cannot be represented. Merleau-Ponty adds that representing the body could even lead to an infinite regress (1945, 107): as the body is what makes possible perception and cognition, and if perceiving and representing involve apprehending the intentional object as external, it would follow that in order to perceive it, one would need another body to make its perception possible, and so on. To avoid the regress—or to avoid stopping it arbitrarily—it might seem better to admit that the body, insofar as it is experienced as what makes perception and cognition possible, is not an object of perception and representation.

Nonetheless, why does Merleau-Ponty think that if the body were represented, it would become (for us) just another physical object? His assumption seems to be that representing necessarily means apprehending the intentional object as external and 'fully constituted.' Yet, this assumption is not binding, for intuitively we could represent things that are either not fully constituted (for example, given some specific perceptual conditions or given our knowledge of them) or not represented as external (for example, mental objects). So, if we set such an assumption aside, the possibility of the body being represented would be compatible with the idea that the body is not, for us, just another physical object.

Instead of body representations, Merleau-Ponty proposes acknowledging the existence of a form of intentionality located between what we could call "epistemic intentionality" or "intellectual intentionality" on the one hand, and mere mechanical responses on the other. This "motor intentionality" would explain the kind of bodily interactions we engage in on a daily basis. These do not follow from explicit and deliberate planning or reasoning, but neither are they automatic or mechanical bodily movements. It would be neither intellectual intentionality nor a stimulus-response explanation, but rather, motor intentionality that would account for everyday actions.

Nevertheless, it is unclear that the notion of motor intentionality dispenses with representational content. Keeping with the kind of example Merleau-Ponty uses, when we physically prepare ourselves to grasp an object, we do it in light of the way the object is given to us. That is, the hand's arrangement, disposition or movement is guided by the way things that surround us are given to us. This way of being given that guides bodily interaction is representational, mental content (see Cussins [2002, 133]). It does not imply, of course, that in order for our surroundings to be given to us, we must engage in some kind of deliberation, reflection or reasoning.

This rough characterization of Merleau-Ponty's view on body representations for everyday action reveals that his considerations do not force us to get rid of those representations. On the one hand, Merleau-Ponty's attack on the notion of body representation depends on a non-binding assumption and, on the other, it is not clear that his notion of motor intentionality dispenses with representational content in the guidance of everyday actions. Should we simply overlook his argument and continue using the classis notion of body representation to account for the guidance of action? I think we should not. It seems to me that behind the rejection of body representations and within the notion of motor intentionality lays deep and reasonable insight. Indeed, some of Merleau-Ponty's considerations would constrain an explanation of the content of body representations guiding everyday action. Now I will present two main constraints that those considerations seem to impose on an acceptable conception of such content.

3. First constraint: the distinctiveness of the body as an intentional object

The first constraint derives from Merleau-Ponty's claim that our body is not represented as a physical object like any other.

Of course, our body is a physical object governed by the same physical laws that govern any other object, subject to the same patterns of causal interaction like other physical objects. When we travel in a vehicle and it takes a turn, our body continues in the direction it was heading prior to the turn. If we fall, we do so at the same speed as any other physical object. In

addition, our body has sensible properties also possessed by other physical objects: color, shape, texture, etc. We have access to these properties through perceptual experiences (visual and other modalities), as in the case of other objects. Nevertheless, there is a fundamental sense in which, for us, our body is radically different from any other physical object.

Some features of the way our body is made available to us are so familiar that we tend to overlook them. However, they are of great importance in order to realize the singular way in which the body is represented. Firstly, the body is typically available to us, as Merleau-Ponty says, "sous le même angle" (1945, 106)—this is why it sounds incoherent to say that I could change my location with respect to my body. Further, the location of our body—unlike the location of any object—is made available to us as the center of our perceptual perspective of the world. All of our perceptions are 'perspectival,' and the point of origin of this perspective is the spatio-temporal region where our body is located.[1]

The distinctive character of our body as an intentional object is enhanced by the fact that we have no need of the intervention of typical sense modalities in order to know the posture and location of our body and body parts. Moreover, the amount and kind of information we receive about the state of other objects does not compare with that we receive from our own body: it is the only object in which part of its internal situation is immediately and permanently available to us.

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[1]   It seems that this aspect of the way our body is given to us can, nonetheless, be disturbed. Olaf Blanke and Christine Mohr (2005) have studied cases of autoscopy, in which subjects (1) have the experience of seeing their own body from an outside perspective; (2) feel as if they were outside their bodies; and (3) experience that their bodies are in extra-personal space. According to their research, this phenomenon may be due to functional disintegration of multisensory processing and to an abnormal processing in the temporo-parietal area.

The extent to which the body that is seen in autoscopy is given *as* one's own (with all the coloring it involves—say, the proprioceptive quality) and the status of the viewpoint from which it is observed are yet to be clarified. For instance, that the proper description of this visual experience is "I experience this seen body as my own body" and not something like "I see *a* body that looks pretty much like mine" needs to be substantiated.

Finally, another outright difference between the way we find out about our body and the way we find out about objects is that one's body seems to be the only object one can immediately or directly move at will: whereas I can only move things through the medium of my body, I do not move my body by means of anything else. Our body is, as Brian O'Shaughnessy (1980) put it, the direct object of the will.

It is true that the body is a physical object, but it is not made available to us as any other physical object is. Its role in perceptual perspectivity, its particular informational availability and the direct control we have over it make part of the way our body is made available to us, and differentiate it from the way we find out about other objects. Thus, no theory about object representation can be, by itself, a theory about body representation. A theory of content that neglects the difference between the body as an intentional object and any other intentional object, will be unsuitable for the task of accounting for the content of body representations that guide everyday actions.[2]

4. Second constraint: an immediate link to action

A second constraint for an account of the content of body representations that guide everyday actions comes from a central feature Merleau-Ponty ascribes to motor intentionality. In our experience of performing every day activities, we do not need to deliberate or reason each time we carry them out. So, the content at issue must be sufficient to bring actions about, having a direct, immediate connection to action—leaving no room for gaps, pre-established harmonies, or the like.

However, it is unclear that some representations are sufficient to produce bodily action or that they have an immediate link to action. That is what Merleau-Ponty seems to express when he says "Il reste à comprendre par quelle opération magique la représentation d'un mouvement suscite

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[2]   Of course, the distinctiveness of the body as intentional object does not need to conflict with its perceptual or representational character. That the body is not experienced as any other physical object does not mean that it cannot be represented at all (see, for instance, O'Shaughnessy [1980; 1995]).

justement dans le corps ce mouvement même" (1945, 63). A belief, for instance, does not necessarily imply bodily action and, to that extent, it is not clear that beliefs are sufficient to give rise to actions. As Adrian Alsmith and Frédérique de Vignemont (2012) point out, beliefs are apt for multiple purposes (e.g. to guide abstract thought). A belief, they say, "as such, it is not intrinsically action-centred [...] the person's belief does not suffice to trigger her action" (2012, 6).

That beliefs and other propositional attitudes can directly lead to (and guide) bodily activities can be seen as a 'natural' thought, contravened by this constraint. It could be said, for instance, that what makes me act as if it was raining is the belief that it is raining. Think, however, of someone riding a bike. She may do it with the intention of traveling somewhere. But why does she push the pedals with her feet at a certain rate? Why does she turn at a certain speed and inclination? Someone may answer that she *knows that* if she keeps *that specific pedaling rate*, she will go at a certain speed, or that she *believes that* if she turns her body at *that specific speed* and with *that specific inclination* she will not fall, and that she does not *desire* to fall. But it seems doubtful that those beliefs are *necessary* to perform such an intentional activity. Even if a subject needs to maintain a certain pedaling rate, speed and body inclination when skillfully riding a bike, and even if those things (pedaling rate, speed and inclination) are somehow given to the subject, it is also clear that subjects who do not have the concepts of "speed," "inclination," and so forth—and *eo ipso* cannot have beliefs (conscious or non-conscious) about speeds and inclinations—can ride a bike. Even more, having those beliefs is not sufficient either to be able to ride a bike: there is nothing extraordinary in the case of someone who has those beliefs and thoughts and, still, is unable to ride a bike. Those beliefs and thoughts are neither necessary nor sufficient condition for being able to perform the activity.

Perhaps propositional attitudes as desires may appear more promising than beliefs. Following Davidson, one could say that it is the conjunction of belief and desire which constitutes the sufficient cause of an action, and that whereas the former constitutes the rational element, the latter constitutes the motivational one. However, the preference for belief over desire in theorizing about propositional attitudes (what Lycan calls "[belief's]

overwhelming social preeminence over the other attitudes" [2012, 213]) is not without reason. To begin with, it is not obvious that desire is a propositional attitude: it is debated whether desires are for states of affairs or for objects as well (Brewer 2006; Thagard 2006); only if they are for states of affairs their content would be necessarily propositional. Yet, folk psychology seems to admit that some desires are for objects—and their specifications in terms of states of affairs seem artificial. In addition, Lycan (2012) has showed that the propositional attitude account of desire leaves out key features of desire satisfaction, capturing only "semantic satisfaction" but not the "real satisfaction" of desires. As Lycan puts it, regarding desire "there is a serious issue about the nature of its contents" (2012, 212). Most importantly, desire's connection to action may be contingent: according to Strawson (1994), it is conceivable that creatures who lack dispositions to act still have desires (if those creatures have dispositions to feelings of pleasure and displeasure for things). Their desires would be for those things that would please them. If so, our precedent remarks about beliefs would apply to desire as well—namely, they might be neither sufficient nor necessary to bring actions about.[3]

The claim that certain representations are not sufficient to produce bodily action and that they lack an immediate link to action is reminiscent of Searle's (2001) attack on the thesis that reasons and intentions (that he calls 'prior-intentions') cause us to act. Searle contends that having sufficient reasons and forming intentions does not always cause agents to do things (2001, 61). He adds that although prior intentions may lead to action, when they do is because of their relation with "intentions-in-action" which directly cause and guide behavior (and so are causally sufficient for it).

Nonetheless, intentions-in-action have to meet some conditions to fill this role (see Pacherie [2000]), otherwise the problem would have been merely displaced. As Cussins (2012) has argued, the only way the represen-

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[3]   Certainly, we do not intend to render propositional attitudes useless in explanations of action theory—there are cases in which those attitudes and their propositional contents seem appropriate for rationalizing our actions. Our claim about them here is that they are not sufficient causes to bodily action.

tational content of a mental could be sufficient for action would be by having an intrinsic motor value for its subject. In other words, content's link to action is to be characterized by means of an inherently motivational way in which the subject's surroundings are given to her.[4] If so, to conceive of the content of body representations that guide everyday bodily activities as something with a primal relationship to action involves conceiving its basic structure as intrinsically motoric. In Alsmith and de Vignemont's words, it has to be "directly exploitable for action" (2012, 7).

5. The second constraint and non-conceptual mental content

Everyday bodily actions are not mere automatisms, rather, they are guided by mental content. When we cross the road, we do it in light of the way our surroundings and our body are given to us. Mental content has been traditionally seen as conceptual content, that is, as consisting of a proposition in which concepts are involved (Bermúdez and Cahen 2015; Crane 1998). For instance, the belief that the grass is green (whose content is the proposition "the grass is green") will involve the concepts "*grass*," "*green*" and "*is.*" In that sense, if Jane does not master those concepts, she could not have formed such a belief.[5]

Nevertheless, we found that representations with conceptual content (as propositional attitudes) do not meet the second constraint. To recap, the

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[4]   In this regard, remember that "motor intentionality" is sometimes described by Merleau-Ponty as a drive or pull to move that it could not be characterized independently from bodily activity.

[5]   How can we tell that Jane understands said concepts? Of course, any answer to that question will be heavily tied to a specific view of what a concept is. Bermúdez and Cahen (2015) recommend to sticking to a criterion that will not be committed to views on concepts that may be either too loose or too stringent. So, a widely accepted criterion for concept possession meeting this requirement is known as the "generality constraint" (Evans 1982, 104). According to this criterion, a subject masters the concepts "*a*" and "*F*" involved in the proposition "*a* is *F*" if she is able to entertain the propositions "*a* is *G*," "*a* is *H*," and so on, as well as the propositions "*b* is *F*," "*c* is *F*," and so on.

content of body representations that guide everyday actions must be sufficient to bring actions about, having a direct, immediate connection to action. That involves conceiving its basic structure as intrinsically motoric. Yet, representations with conceptual content might not be sufficient to produce bodily action. If so, the content of body representations that guide everyday action is not conceptual content.

Now, could there be a relation a subject can have with conceptual content (an 'attitude') that contextualizes it and makes it directly prone for motor execution? Let us look at what could be considered the epitome of 'contextualized' content, namely, certain content that is specified using demonstratives. It is generally agreed that grasping this content demands the subject to be in a certain perceptual situation: for instance, if John says to Jane "that is green," Jane must be able to see the object (otherwise she would be unable to grasp what the demonstrative refers to) (see Evans [1981; 1982]; Kaplan [1989]; Burge [1991]). Moreover, grasping that demonstrative content requires John, the utterer, to make a 'demonstration' by somehow pointing at the referred object. As it can be seen, this content is highly contextualized, that is, reliant on the context in which pointing and perceiving take place (which might facilitate its use for action). Nonetheless, for this very reason it has been claimed that it cannot be fully conceptual (Cussins 2002; Kelly 2001; Tye 2005): for instance, to the extent that the demonstrative does not have the same content as a name or description (Perry 1979; Evans 1982; Kaplan 1989), it would not be suitable for the style of objective, general specification conceptual content needs (see Cussins [2002; 139]).[6,7]

As Cussins (2002, 134) points out, conceptual content presents the world as divided up into objects, properties, etc. (a structure that demands putting conceptual skills into play). For its part, content prone for action in a specific context will arguably present the environment in terms of what is relevant to the ongoing activity—for which it suffices presentations of

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[6]   *Eo ipso* it would not allow subjects enjoying demonstrative content to fulfill the generality constraint either

[7]   We will leave aside so-called "demonstrative concepts" (McDowell 1994), restricting ourselves to endorse strong doubts on the notion put forward by authors as Kelly (2001), Heck (2000), Tye (2005), and Bermúdez and Cahen (2015).

things as what summons certain action in a context at a time. None of that implies labelling things as elements of a set, neither allowing for reidentification, among other core conceptual abilities.

Therefore, (1) the dependence on a context of activity seems to prevent 'contextualized' content from exhibiting the traits of objectivity and generality that belong to conceptual contents (as well as subjects enjoying that content from fulfilling Evans's constraint) and, in addition, (2) in order to enjoy content suitable for action-guidance in a context the subject would not need to exercise fundamental conceptual abilities. It follows that contextualized mental content will not be the same conceptual content of a belief, and that there cannot be an 'attitude' that contextualizes conceptual content and makes it directly apt for action guidance.

If anything, conceptual content directly entails more conceptual content, not bodily movements. Paraphrasing Cussins, conceptual content constituents may be "truth-makers," but what we need is "action-makers." More than a conceptual structure, the content of body representations that guide everyday activities must have an action-oriented, nonconceptual structure.

In order to secure both its action-oriented and intentional character, that non-conceptual, motor-intentional content (that we will refer to henceforth as MIC) must be such that it not only produces in its subject a drive to act on certain environmental items, but such that through this prompting it is about those items. How could MIC achieve that? If (a) it makes environmental items non-conceptually available to the subject, and (b) it does so at the same time that it drives the organism to act, a natural supposition is that (c) it makes those items available to the subject in terms of specific actions that she is able and summoned to perform—that is, as intrinsically motivational possibilities for action. Those possibilities for action are about environmental items in the sense that it is the apple that is given as edible, and it is the doorway which is given as passable, etc.[8]

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[8]   Even though both are conceived as possibilities for action, MIC and affordances have important differences. First and foremost, it could not be possibly overlooked that for James Gibson (1979), the concept of an affordance is a theoretical construct devised instead of representational content. He never treated affordances as a form of content, despite the fact that they provided information about the environment

That form of cognitive access to environmental items, that is, the fact that they are given as possibilities for action with intrinsic motor value, allows us to understand how MIC can guide our everyday activities without the need of inferences or conceptual content—why when we act, we do not always act on the basis of plans, prior intentions or the like. This is how MIC could be directly exploitable in the guidance of action without need of the intervention of deliberation, reasoning or reflection. By the same token, this is how MIC does not involve concept possession but only being prompted to act.

It is worth underlining some consequences of this way of conceiving the content of body representations that guide everyday action. First, as we noted, content given in terms of specific actions a subject is directly prompted to perform only needs to make available what is contextually relevant to the subject, given the requirements of the ongoing activity (see also Clark [1998]; Wheeler [2005]). Specifically, that content does not have to label environmental items as elements of a set or allow for reidentification—characteristic traits of conceptual content. In this regard, we also noted that the strong dependence on the context of bodily activity that a form of content directly exploitable for action must have is conducive to an enormous deviation from the objective, general and context-independent conceptual contents. As Cussins (1992) has argued, content's context-dependence, by virtue of which it can have direct connection to action, does not fit the generality and objectivity of conceptual content. Thus, it seems that either content keeps properties as generality and objectivity, or it is directly connected to action.

The second consequence has to do with the content-attitude distinction. "Attitudes" are the relations in which a subject may stand to mental contents. They have been seen as capturing the "cognitive mode" of the intentional state, given the neutrality of its purported content. Since the content was thought of as general and objective, it was the "attitude" that was

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and about the animal. Instead, he insisted that affordances could be fully understood in terms of the laws of "ecological optics," without any resort to intentional explanation. For its part, MIC has been explicitly introduced as a form of mental, representational content.

supposed to grasp differences in content's cognitive significance: p *as believed*, p *as desired*, etc.

But MIC is not neutral, neither general, nor objective, so we do not seem to need an independent account of its cognitive significance. Furthermore, we could not have content given in terms of intrinsically motivational possibilities for action paired with a non-motoric cognitive significance— just as we could not have another kind of content (conceptual, non-action-oriented) with an intrinsically motoric significance (see above). So, in regard to MIC, the separation between an attitude and a content would end up being artificial and idle.

5.1. The specification of MIC

The characterization of MIC conforms to Millikan's (1995) principle that in order to determine representational content, we need to look at how it is used (in this case, its use for action). As in Millikan's notion of representation, MIC varies in accordance with what it makes available. Moreover, like "pushmi-pullyu representations" (PPRs), it could be said that MIC mediates the production of a certain kind of behavior that varies as a direct function of environmental variations. However, unlike PPRs, the way that MIC maps onto the world cannot be simply specified descriptively or directively. Remember that, according to Millikan, although PPRs have both descriptive and directive functions, they are more primitive than purely directive or purely descriptive representations, whereby PPRs content is not equivalent to the conjunction of a descriptive and a directive representation. Still, Millikan grants specifications of PPRs content in terms of a telic proposition plus a thetic one (and, perhaps, the disclaimer that the actual content of the PPR is simpler than that conjunction).

In regard to MIC, not just any descriptive specification would suffice, because it should include not only those aspects of the world that are contextually relevant for the subject, but their connection to actions that can be carried out in that context. So, descriptive sentences that only mention categorical properties do not seem suitable for the task. A better candidate for the specification of MIC would be sentences that include adjectives referring to possible actions (climbable, edible)—those sentences could also

be said to have a somehow directive ingredient, in the sense that they point out what can be done.[9]

The kind of specification Millikan grants for PPRs seems to give up on the enterprise of grasping their cognitive significance, remaining close to the specifications of beliefs and desires. Meanwhile, the rationale behind the specification we suggested is that there are mental contents beyond those of propositional attitudes, whose particularity can be grasped in their specification.

Now, since there are many possibilities for each action, someone could expect of MIC that it allows for a more detailed specification of an action that is given as available to a subject. After all, if a cup of coffee is given as reachable (that is, in a way that prompts to reach for it), one may wonder: Reachable how? At what speed should I move my hand? What hand? With how a strong or open a grip? Among others. Moreover, can we really say that a subject represents the cup of coffee in terms of action she is prompted to perform if these specifications were not included in her MIC?

It is not clear to me that allowing for such a detailed specification should be a requirement for MIC. First of all, considering that a requirement would be a form of what is sometimes called "strong instructionism" (Wheeler 2005; Wheeler and Clark 1999; "strong instructionalism," see Gallagher 2008), the claim that an item X codes for an outcome Y iff X specifies every feature of Y. Yet, representationalists need not be committed to such a claim, for it suffices for something to be a representation that it has the function of [non-exhaustively] coding for information about something else (Clark 1998, 146; Wheeler 2005, 197). In other words, for representationalists, X can code for Y even if the former does not specify every feature of the latter.[10]

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[9]   Of course, it does not mean that such a specification is not without limitations (particularly in grasping the intrinsically motivational character of the afforded action, which seems to be something that must be added to the specification).

[10]   At the subpersonal level, instructions might be issued about hand speed, direction, grip strength and aperture. But this is by no means a description of our experience of grabbing a cup of coffee (at the personal level). The environment might also play a role in establishing a number of features of my hand movement, but it does not mean that content plays no role at all.

However, even granting that something can be a representation of an outcome without being strongly instructional, two related questions arise: in which sense does MIC present things as possibilities for action if actions are not fully specified by it? What does it mean that MIC prompt us to act if we do not say what actions it prompts us to perform? I will try to answer both questions by means of an example.

Let us concede, for the sake of the argument that, as Martin (1993, 208) contends, bodily sensations inform us about the state of a body location. Instead of raw feelings, itches, for instance, would indicate to one something about a part of the body. Itches characteristically prompt an action as well: scratching. Noteworthily, those two traits of itches seem to be intertwined, for there does not seem to be anything else to what itches indicate about the body part beyond the afforded scratching. So, it could be said that itches present body locations as 'scratchable.' Nonetheless, in order to present the body location as scratchable and to prompt an action, itches do not need to include the full specification of the hand with which to scratch, of whether to scratch the body part with one's nails or with a stick, etc. Just like itches, MIC may present things as possibilities for action and it may prompt the subject to act without fully specifying the afforded action—to use Wheeler's expression, MIC might do both in a "partial and patchy" way (2005, 239).

6. Non-conceptual mental content: possession and specification

I would like to inquire now into a potential difficulty for the specification in terms of possibilities for action that we have just proposed for the content of body representations that guide everyday action. Cussins (1992, 664) has remarked that a certain train of thought leads to the conclusion that all content is conceptual content: if something is a form of content, then it is a presentation of the world, and that any presentation of the world presents it as being one way or another. If the world is the way the content presents it, then the content is true. However, Cussins says, the content that is said to have truth conditions is conceptual content. Thus, in order to avoid that conclusion, he infers that we must commit to the claim that non-conceptual

content must not bear a truth value. How could a presentation of the world lack truth value?

To answer that question, Cussins's (1992) introduces a "featuring-place language" (FPL), a language without subject/predicate structure, such that the semantics of its sentences do not involve the identification of particulars, but just the placing of features. Inasmuch as their semantics prevents us from considering them as utterly referential sentences, FPL sentences cannot be considered as either true or false. Furthermore, insofar as the ability to discriminate a feature does not require the ability to identify something as an object or a particular place, the significance of such sentences is restricted to the indication of the general area of incidence of features. Therefore, the specification of non-conceptual content in terms of FPL sentences (that the theorist might enhance with "ordinary" sentences; 1992, 666) would capture its distinctive availability for the subject—it would be *canonical*.

The specification we have proposed—something like "the apple is available to the subject as edible" or "the wall is given to the subject as climbable"—is far from the specification in terms of FPL sentences. According to Cussins's argument, our specification would be true or false and therefore conceptual. Nevertheless, it seems that some elements of the train of thought Cussins begins with can be treated differently from the way he does (or grants). In particular, it seems to me that claims as "if the world is the way the content presents it as being, then the content is true" (1992, 664) and that the content that is said to have truth conditions is conceptual content, are not sensitive enough to distinctions that it is healthier to keep in mind.

The condition that must be met for a token to have the representational content it has is sometimes called its "truth condition." When this designation is used, the fact is conveyed that, if this condition is met, (1) it renders true some propositional specification of such content, and (2) the content can be said to reliably map the environment (and, to that extent, it is "true" in some loose sense). The possibility of non-conceptual content depends on granting that (i) the subject is not supposed to understand that propositional specification. Furthermore, non-conceptualists have granted that (ii) content can reliably map the environment without being *a fortiori* conceptual

content (Christopher Peacocke's [1992] scenarios would be a good example of this). Note that (i) implies that, for nonconceptualists, content possession is not necessarily the same as understanding its propositional specification. Moreover, inasmuch as truth or falseness are properties of sentences or propositions, the non-conceptualist must bear in mind that *stricto sensu* (iii) it is only propositional specifications of content that are true or false.

Therefore, that the propositional specification of certain content is true when its condition is met (i.e., that it has a truth condition), does not mean that this content is conceptual. In other words, the truth of the propositional specification of that content does not imply that the subject actually enjoys conceptual content or that in such content something is given to a subject as a portion of an independent world structured in terms of objects and properties. Thus, specifications of non-conceptual mental content may be propositions and then involving concepts, although non-conceptual content does not present the world to its subject as divided up into objects, properties, etc. We would not be forced to adopt FPL specifications, because having true propositional specifications does not make non-conceptual content conceptual.

In any case, it could be said that FPL specifications are more faithful to the distinctive way in which some aspect of the world is non-conceptually available to a subject than any propositional specification could be. The idea would be that FPL specifications capture content's cognitive significance; in other words, that they are *canonical*.

Let us pose a naive question. Since every linguistic, theoretical specification of mental content is, to a greater or lesser extent, propositional and conceptual, how is it possible to achieve canonicity with respect to non-conceptual content? The answer is that what a theory of non-conceptual content ascribes to a subject is what its favored concepts refer to, not the understanding of the concepts themselves. In specifying non-conceptual content, the theorist can use concepts the subject does not need to have *because* what he is attributing is what her concepts refer to, not the possession of the concepts themselves. In this regard, FPL specifications are on an equal footing with other specifications of non-conceptual content.

7. MIC and its relation to other kinds of content

I would like to finish by delving into an observation made by Alsmith and de Vignemont (2012) about the connection of representations with different kinds of content to action. Evidently, exhaustively addressing the issue would require deeper treatment of other subjects (for instance, related topics of philosophy of action, rationality, and decision-making, among others), which goes beyond the scope of the present work. Accordingly, we will restrain ourselves to make a few suggestions taking into account our previous discussion.

In discussing the nature of "action-centered" representations and the role other representations may play in action, Alsmith and de Vignemont point out that "the role of representations in action is not a matter of all or nothing […] Here, and arguably elsewhere, the connection between representation and action is a matter of degree; it is a matter of how direct or immediate the transition is from representation to action" (2012, 6). They go on to illustrate this observation with the following example: "A person goes to the kitchen, and intends to do so because she believes that there is chocolate there," which they contend illustrates the fact that "even highly cognitive states at the personal level can be causal antecedents to action (or at least explanatorily implicated by an action)" (Alsmith and de Vignemont 2012, 6).

The idea that content's relevance for action is a matter of degree has implications on what we previously said in regard to the fact that generality and objectivity, on the one hand, and context-dependence and action-value, on the other, do not integrate well. Arguably, generality and objectivity are also a matter of degree: for instance, egocentric and indexical contents are arguably less general than the content of highly abstract forms of knowledge, but still have conceptual elements. At the same time, the former are more context-dependent and seem to have higher action value than the latter. Generality/objectivity and action-value could be then described as inversely proportional features of mental content, so that the higher its action-value and context-dependence, the lower its generality and objectivity, and vice-versa.

The above considerations are in consonance with Cussins's (1992, 684) claim that generality and objectivity are a single trajectory within the

"space which is available for representation," and within which conceptual content is "confined to a tiny region." They are also in consonance with Clarks' views (1998, 147), which speak of a "continuum of possibilities," within which we find not only typical representations (that he locates in its "upper reaches"), but also action-oriented "biological cognition" which would fall "somewhere near the middle of this continuum" (1998, 114).

Consequently, only in the case of the highest degree of action-value, content would exhibit direct o immediate exploitability for action. I have argued that content is exploitable in this way only if it has intrinsic motor value or motivational dimension, which would be achieved by content structured in terms of prompting possibilities for action; any other kind of content will have a more or less *mediated* relationship to action. That is, given the lack of the required "format," supplementary steps need to be added to link conceptual content to action. What is the indirect process through which content with lower degrees of action-value succeed in influencing action? In Alsmith and de Vignemont's terms, how does the "transition" take place?

The privileged account of how this transition takes place is the notion of a "practical reasoning." Very roughly, this is a kind of reasoning in which propositional attitudes, perceptual judgments and the like, figure as premises, and the conclusion has the form of an intention. For instance, if Juan believes he has to leave the room, sees that the room's door is locked and knows that in order to leave the room he has to unlock the door, he would make a practical reason like this:

P1.   I have to leave the room.
P2.   The door is locked.
P3.   In order to leave the room, I have to unlock the door.
C.   I will unlock the door.

The idea, then, is that in order for mental states with a low action-value (such as beliefs) to lead to action, they must be framed in an inferential process leading to the formation of an intention.

However, if there is a gap between our prior intentions and our actions (Searle 2001), the production of the intention could be insufficient for the production of the action. As we noted earlier, Searle attempts to bridge that

gap by introducing intentions-in-action, which are conceived of as directly causing and guiding the action. We argued therein that filling this role is only possible if the content of intentions-in-action has intrinsic motor value. To that extent, MIC could be seen as a candidate for the content of intentions-in-action (see Pacherie 2000). If intentions-in-action are needed in order for the conclusion of a practical reasoning to lead to action, surely the content of those intentions will have intrinsic motor value and will be structured in terms of the local conditions of the activity. Therefore, the transition to action would be possible for content with low action-value because of MIC that directly guides the action.[11]

8. Conclusions

Over the last two decades or so, much has been said about the role of the body in cognition. However, the ways in which we come to know about our bodies have been a less hot topic, even though there is much to clarify about it. In this regard, we focused on the issue of body representations and

[11]   Stephen Butterfill and Corrado Sinigaglia (2014) have advanced a proposal devised to explain how intentions would relate to action through motor representations. They claim that action's directedness to an outcome is dependent not only on intentions but on the motor representations involved in its execution (which can be considered representations of action outcomes). When one particular action is guided by an intention and by a motor representation at the same time, they are non-accidentally related, because some intentions involve demonstrative action concepts ("*do that!*"), which refer to actions by deferring to motor representations. Demonstrative action concepts would be the link between intention and practical reasoning on the one hand, and motor processes, on the other. However, Butterfill and Sinigaglia do not make clear what kind of representational mental content characterizes motor representations—especially if this content is conceptual or not—neither what gives this content its distinctive motivational or motor character. Even though some inklings can be found when they claim that "unlike intentions, motor representations cannot feature as premises or conclusions in practical reasoning" (2014, 119) because of the "distinctively motor, non-propositional format of motor representations," the lack of overt, explicit answers to those questions prevents us from considering their approach to be sufficient to explain the relation between intentions and action.

their role in action, and proposed an approach to the mental content of body representations involved in the guidance of everyday actions.

In order to arrive at that proposal, we first analyzed and rejected some arguments against the notion of representation and against the notion of body representation. In particular, we argued that Merleau-Ponty does not succeed in undermining the role of body representations in the guidance of everyday actions. However, we also found that his insights cannot be disregarded and, even more, they become constraints to any explanation of the content those representations have: such an account must acknowledge the unique way in which its body is given to a subject and must show how the relevant content is directly connected to action in a way that makes it sufficient for the production of action. It was through this latter constraint that we arrived at the notion of a motor-intentional, non-conceptual mental content guiding everyday actions. MIC was introduced as a form of cognitive access to the world, presenting things in terms of specific actions that the subject is prompted to do with its body, a strongly context-dependent content in which the applicability of the content-attitude distinction is unclear.

The kind of specification we proposed for MIC, a sort of description of the possibilities for bodily action given to the subject, was confronted with Cussins's argument about the need of a featuring-place language. We contended that the specification proposed by Cussins is not mandatory, and that the kind of specification we proposed may still be adequate. Lastly, we made some remarks as to the relation that representations with different kinds of content have to action. Those remarks led us to infer that MIC would be required if contents with low action-value are to influence action.

There might be the question of what body representations can be regarded as having MIC. As I noted earlier, the distinction is usually drawn between body schema and body image (see de Vignemont [2010] for a review and de Vignemont [2018, 163] for a reconsideration of the distinction). Following that distinction, if the body schema's function is to guide everyday action, according to our argument, its content must be non-conceptual. As Hanna and Maiese (2009, 69) concur, the body schema would thus be the prime example of an action-guiding body representation with non-conceptual mental content (see also de Vignemont [2018, 191]). In this paper we

focused on the consequences derived from the second of the two constraints that were put forward. A thorough development of the notion of MIC, of course, necessitates a detailed account of how the body non-conceptually figures in it. MIC's relation to different approaches to the notion of body representation available in the literature of cognitive science should be addressed as well. Finally, it is worth considering whether MIC is of some use when dealing with certain issues of body cognition (such as the sense of ownership toward one's body and the location of bodily sensations, among others). For the time being let's our previous discussion be enough in regard to the consequences of the second restriction, allowing forthcoming research to develop those further topics.

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