

## Perspectival content of visual experiences

Błażej Skrzypulec

To cite this article: Błażej Skrzypulec (2023): Perspectival content of visual experiences, *Inquiry*, DOI: [10.1080/0020174X.2023.2212018](https://doi.org/10.1080/0020174X.2023.2212018)

To link to this article: <https://doi.org/10.1080/0020174X.2023.2212018>



Published online: 22 May 2023.



Submit your article to this journal [↗](#)

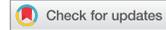


View related articles [↗](#)



View Crossmark data [↗](#)

---



# Perspectival content of visual experiences

Błażej Skrzypulec

Institute of Philosophy, Jagiellonian University, Kraków, Poland

## ABSTRACT

The usual visual experiences possess a perspectival phenomenology as they seem to present objects from a certain perspective. Nevertheless, it is not obvious how to characterise experiential content determining such phenomenology. In particular, while there are many works investigating perspectival properties of experienced objects, a question regarding how subject is represented in visual perspectival experiences attracted less attention. In order to address this problem, I consider four popular phenomenal intuitions regarding perspectival experiences and argue that the major theories of perspectival experiences do not account for all of them. Relying on these observations, I show how a theory which accommodates all these intuitions can be developed by (a) recognising that visual perspectival experiences are, in fact, multimodal visuo-bodily experiences and (b) distinguishing between egocentric and structural contents.

**ARTICLE HISTORY** Received 7 December 2022; Accepted 4 May 2023

**KEYWORDS** Perspectival experiences; vision; representational content; phenomenal character; perceptual structure

A common conviction regarding visual experiences is that they possess a perspectival phenomenal character. This means that in usual visual experiences, objects are experienced from a certain perspective, i.e. they are experienced as positioned at some egocentric distance and direction within the spatial structure of the visual field. For instance, an object may be perceived as being far away and being to the right in such a manner that it is close to edge of the visual field. However, another object may be experienced as also being to the right but as being closer and in proximity to the centre of the visual field. Similarly, two objects may be experienced as positioned at the same distance and in the same relation to the centre of the visual field, but one is experienced as being to the left and the second as being to the right. From a representationalist perspective, which assumes that the phenomenal

**CONTACT** Błażej Skrzypulec  [blazej.skrzypulec@uj.edu.pl](mailto:blazej.skrzypulec@uj.edu.pl)  Institute of Philosophy, Jagiellonian University, ul. Grodzka 52, 31-044 Kraków, Poland

© 2023 Informa UK Limited, trading as Taylor & Francis Group

character of experiences depends on their representational content (e.g. Cutter and Tye 2011; Green 2016; Siegel 2010; Wu 2011), it is interesting to ask what the content of visual experiences which determines the perspectival phenomenology is.

In particular, if objects are represented as positioned at some egocentric distance and direction, it may be asked whether they are represented as being at a certain distance and direction from some entity. Intuitively, it seems that to account for the perspectival phenomenology, the content of visual experiences should be characterised in relational terms such as  $X$  is in  $R$  to  $Y$ , where  $X$  is an object-element, i.e. a perceived entity,  $R$  names some relation characterising distance and direction, and  $Y$  is a subject-element, i.e. the perceiver or its location. In the contemporary philosophical literature, there is a significant number of works concerning the nature of the object-element. Such works discuss the status of perceptual properties responsible for perspectival looks of seen objects (e.g. Bennett 2012; Green and Schellenberg 2017; Jagnow 2012; Weksler 2016) and investigate whether we simultaneously see things as having both view-point dependent and intrinsic properties (e.g. Noë 2004; Kelly 2008; Schwitzgebel 2006).

In contrast to these works, this paper focuses on the subject-element of perspectival content, i.e. content which determines the perspectival phenomenal character of experiences. I start (Section 1) by distinguishing four important intuitions regarding the phenomenal character of visual perspectival experiences, relying on contemporary discussion about the perspectival character of perception. Further (Section 2), I discuss the major theories of perspectival experiences and argue that the way in which they characterise the subject-element does not allow for satisfaction of all phenomenal intuitions discussed in the paper. It should be noted that my goal is not to show that any of the main theories of perspectival experiences is false. I merely aim to argue in favour of a conditional claim that if we want to accept all relevant phenomenal intuitions, then a distinct theory is needed, as the main theories of perspectival content do not accommodate one or more of them. Due to these factors my main focus is not on justifying the intuitions discussed in the paper, but on observing that such intuitions are present in the literature and developing a proposal which accounts for all of them. Furthermore, I do not want to claim that my theory is the only one which is able to accommodate all phenomenal intuitions or that it is impossible to modify the current theories of perspectival experiences such that they accommodate more of these intuitions than they currently do. I merely

want to (a) show that the most popular versions of the current theories of perspectival experiences do not accommodate all popular phenomenal intuitions and (b) develop a theory which accommodates them.

This discussion allows me to present two main dilemmas which are faced by representational theories of perspectival experiences. The first concerns the tension between a conviction that there is no visual phenomenal character associated with the subject-element and an intuition that there is a phenomenal difference between object-motion and self-motion. The second dilemma involves the question of how to specify the representational content in order to account for those aspects of perspectival phenomenology which are determined by the bodily posture in addition to those which are not.

I propose that these dilemmas can be solved by two theoretical moves, and it is possible to formulate a plausible theory of perspective content which satisfies all four popular phenomenal intuitions. First (Section 3), I argue that visual perspectival experiences are, in fact, multimodal visuo-bodily experiences in which the subject-element is a bodily structure represented in virtue of bodily awareness. Second (Section, 4), I postulate that objects in perspectival experiences are represented as related not only to the bodily subject-element, but also to structural elements of the visual field.

## 1. Four phenomenal intuitions

In this section, I describe four important phenomenal intuitions which can be frequently found in the rich philosophical literature regarding the perspectival experiences. As stated in the introduction, intuitively, the perspectival content of visual experiences has the following form: *an object-element X stands in a distance and a direction relation to a subject-element Y*. Nevertheless, it seems that while there is visual phenomenal character corresponding to the object-element, this is not the case with the subject-element. For instance, an object-element is experienced as an entity having a certain colour and shape. However, the situation is different with the subject-element. The subject-element is not one of the visible objects within the boundaries of the visual field, rather it is positioned in the location from which the visible objects are perceived. In consequence, it does not seem to be experienced as having visual phenomenal properties like colours or shapes. This general idea has been expressed in various terms by several authors, for instance by claiming that the subject-element is not

perceived directly (Schellenberg 2007), that a subject is not in its own field of vision (Perry 1986), that the content of visual experience leaves the perceiver out of the picture (Brogaard 2010; Brewer 1992), or that there is nothing corresponding to 'I' in a perceptual experience (Evans 1982, 232–233).

Relying on these observations, I propose the first phenomenal intuition which denies that visual perspectival experiences possess visual phenomenal character corresponding to the subject-element.

(PI-1) Visual perspectival experiences do not possess visual phenomenal character corresponding to the subject-element.

Nevertheless, it would be too quick to state that changes in properties of the subject-element do not influence the phenomenal character of perspectival experiences in any way. In particular, it has been noted that there is a phenomenal difference between experiences of self-motion among stationary objects and experiences of moving objects around the stationary self. A vivid example, provided by Schwenkler (2014), concerns an illusion of self-motion induced by being positioned in a rotating drum. When a person is stationary in a rotating drum, at first a veridical experience occurs representing a moving surface around the motionless subject. However, after a while an illusory experience occurs representing that a subject is spinning in a stationary drum. Another example concerns the phenomenon of 'visual kinesthesia' (see Gibson 1986, 183; Smith 2002, 145). When a person is moving through the environment, for instance walking or driving, the perceived objects uniformly expand in the visual field as a person is approaching them. This constitutes a visual cue which leads to experiences, sometimes illusory, of self-motion in the stationary surrounding.

All these examples suggest that (a) there are visual perspectival experiences which represent that an object-element is moving and the subject-element is stationary, (b) there are visual perspectival experiences which represent that an object-element is stationary and the subject-element is moving and (c) these experiences have differing phenomenal characters. In particular, the phenomenal character of self-motion is such that a person experiences that the movement is attributed to her and not to some other object. It is worth noting that such phenomenal distinction does not require any further differences in representational content. Two phenomenally distinct experiences may represent the same object-element, the same subject-element, and the same pattern of changes in the visual field (e.g. the object crosses the left border of the field of

view), while differing only in the respect that one attributes movement to the object-element and second to the subject-element.

These observations lead to the second phenomenal intuition:

(PI-2) A visual perspectival experience representing self-motion among stationary objects has a phenomenal character different to a visual perspectival experience representing movement of objects around a stationary subject, since in the self-motion case a subject is experienced as an entity to which the movement is attributed.

According to the intuitive idea mentioned earlier, perspectival experiences represent that an object-element stands in some distance and direction relations to the subject-element. In consequence, it seems that visual perspectival experiences have a 'directional phenomenology' concerning whether an object-element is, for instance, in the front and to the right or in the front and to the left of the subject-element (later, for short, I write simply 'to the left' or 'to the right'). Let's consider a situation in which an object is perceived as positioned 10 centimetres from the centre of the visual field. It seems that in most cases we visually experience not only that the object is in some location within the visual field (i.e. 10 centimetres from the centre), but also that the object is, in some direction, relative to our position (for instance, to the left). The phenomenal differences regarding representing something in some directions from the subject-element are the difference in the directional phenomenal character.

The precise description of the directional phenomenology depends on the accepted approach to the subject-element. For instance, if a subject-element is a simple entity without internal structure, then every object will be in a single directional relation to such subject-element. However, if the subject-element is, for example, a body made of parts, then every object may be in many distinct directional relations to various bodily parts. The specific pattern of such relations may then determine whether an object is experienced as being, for instance, to the left or right, to the whole structured subject-element.

The presence of directional phenomenology establishes a link between perceived objects and the subject's bodily structure. A common observation made in the philosophical works is that the perspectival experiences represent objects in such a way that it may be determined what actions can be conducted towards them (e.g. Alsmith 2017; Brewer 1992; Zahavi 1999). For instance, an experience that an object is in the direction labelled 'left' allows the most efficient way to grab it to be

determined. This way is distinct than in the case of an experience of being to the 'right'. It seems that to help in determining the appropriate actions, the directional phenomenology should concern the way in which an object is related to the subject's body. For instance, the direction labelled as 'left' represents a different object-body relationship to the direction labelled 'right' (see Briscoe 2009; Smith 2014; Thompson 2005).

Relying on the proposed relation between the directional phenomenology and the body, the third phenomenal intuition can be formulated in the following way:

(PI-3) A visual perspectival experience has a directional phenomenology which represents an object's relationship to the subject's body in a way that helps to determine the appropriate actions towards an object.

It should be noted that PI-3 does not entail a thesis that objects are represented as subjects of some possible actions or as having action-related properties sometimes known as 'affordances' (see Alsmith 2017). For instance, it is coherent with PI-3 that the bodily aspects of directional phenomenology help in determining the appropriate actions in virtue of providing a *prima facie* justification for beliefs regarding actions that can be conducted. Furthermore, endorsing PI-3 does not require a postulation that the bodily aspect of directional phenomenology is particularly salient in usual experiences. It is sufficient to accept that, as commonly pointed out in works regarding the awareness of the body, the body is merely peripherally present in consciousness (e.g. Elder 2013; Hochstetter 2016; Kinsbourne, 1995; Lana 2018; Marcel 2003).

The intuitions PI-2 and PI-3 suggest that there is a perceptual phenomenology regarding self-motion and a perceptual directional phenomenology having a bodily aspect. Nevertheless, one may alternatively propose that phenomena characterised in PI-2 and PI-3 can be, in fact, described by referring merely to having certain beliefs without postulating a perceptual phenomenal character. One of the major indicators of perceptual phenomenal character discussed in the philosophical works is the independence from background knowledge and additional propositional information (e.g. Bayne 2009; Block 2014). While beliefs are likely to change when new propositional information is provided, the perceptual phenomenology tends to be insensitive to such additional information. I believe that such independence is present in the case of phenomena described in PI-2 and PI-3 and due to its presence, the perceptual status of self-motion phenomenology and bodily aspect of directional phenomenology should be treated at least as a serious hypothesis. In

particular, the self-motion illusions, such as the rotating drum illusion, happen regardless of whether a person knows that only the drum is moving (see Schwenkler 2014, 11). This suggests that the possessed propositional knowledge does not affect the self-motion phenomenology, as information that a subject is stationary does not change a self-motion experience into an experience of an object-motion. A similar independency seems to be present in the case of directional phenomenology. For instance, if one experiences that an object is closer to the left than right side of the body, this perception is likely to remain even if one obtains an information that it is an illusion caused by some placement of mirrors.

Furthermore, I do not assume that necessarily the phenomenology described in PI-2 and PI-3 occurs in the case of all perspectival experiences. For my purpose, it is enough to accept that it seems to occur in common cases of such experiences, so it is worthwhile to develop a theory of perspectival content which accounts for these phenomenal aspects. However, I believe it is likely that PI-2 and PI-3 can be applied to typical cases of perspectival experiences, as in such experiences the subject is represented as either moving or as being stationary among objects, and objects are represented as related to a subject in a way which helps in determining the appropriate bodily actions aimed towards them.

While the directional phenomenology represents a specific relationship between an object and the body, it is not the case that all phenomenal character associated with visual perspectival experiences represents objects in this way. The visual field is often characterised as a structure composed of visual directions which stand in certain topological relations (see Chomansky 2018; Gregory 2013, 33; Jagnow 2012). Some directions are connected to each other such that there is no other direction between them, and some are separated by a chain of connected directions. Furthermore, visual directions are organised in such a way that they meet at a 'starting point' of the visual field in a place close to our eyes. These topological relations create a stable structure of the visual field which stays the same even if, due to changes in directional phenomenology related to changes in bodily posture, the way in which visual directions are labelled is modified. For instance (see Peacocke 1992, 62 for the famous Buckingham Palace example), initially an object may be experienced as being straight ahead, but after rotating the torso it may be experienced as being slightly to the left.<sup>1</sup> Nevertheless, both before and

---

<sup>1</sup>Here, I left in neutral whether 'to the left' means left from the subject taken as a whole or left from some of its parts.

after the bodily movement the object can be experienced as occupying the same position within the structure of visual field, for instance as being at distance  $D1$  from a visual direction  $P$  lying on the edge of the visual space and in a distance  $D2$  from the 'starting point' of the visual field.

In consequence, there seems to be an aspect of visual phenomenology, which may be named 'topological phenomenology,' regarding the topological structure of the visual field, which is unaffected by changes in the directional phenomenology. This stability of topological structure may be expressed by the fourth phenomenal intuition:

(PI-4) A visual perspectival experience has topological phenomenology which remains the same regardless of the changes in directional phenomenology.

In the next section, I discuss the major theories of perspectival content. I argue that none of them accommodates all described phenomenal intuitions.

## 2. Theories of perspectival content

I start by analysing the monadic theories which, in order to accommodate intuition PI-1, deny that the content of perspectival experiences contains a subject-element (Campbell 1994; Evans 1982; Perry 1986; Schellenberg 2007). Second, I investigate the self-location theories which, relying on intuition PI-2, propose that perspectival experiences represent objects as related to the subject (Schwenkler 2014) or its location (Mitchell 2021). Finally, I refer to agentive theory proposed by Alsmith (2017) who accommodates intuition PI-3 by characterising the subject-element as a body composed of spatially arranged parts.

### 2.1. Monadic theories

Intuition PI-1 expresses the idea that the perspectival experiences do not have phenomenal character corresponding to the subject-element. A straightforward way to accommodate this claim is to propose that visual perspectival experiences simply do not represent the subject-element. Further, I use the term 'monadic theories' to refer to theories which do not include the subject-element as a part of the content of perspectival experiences.

In the contemporary philosophy of perception the monadic solution has been proposed by Evans (1982, 232–233) who believes that while

perspectival experiences justify beliefs such as 'I am in front of the door', it does not happen because the subject is represented in her own perceptual experience, but in virtue of combining the perceptual content with a wider framework of knowledge and beliefs. Furthermore, the monadic view has been argued for by Campbell (1994, 119–121), and more recently by Schellenberg (2007), by utilising the notion of monadic spatial representations (see also Peacocke 2001, 219–220 for a similar concept). According to this approach the content of perspectival experiences does not have the form: *an object-element stands in distance and direction relations R to the subject-element*. Instead, the content is simply *object element stands in distance and direction relations R*. The subject-element is not represented and the spatial relation is 'monadic' as it does not connect two relata.

The monadic approaches obviously account for intuition PI-1: If the perspectival content does not involve a subject-element, then it is not surprising that there is no visual phenomenal character associated with this element. Similarly, such approaches have resources which allow intuition PI-4 to be accommodated as it may be proposed that the organisation of monadic directions creates a structure with stable topological features.

Nevertheless, the monadic accounts have problems accounting for intuitions PI-2 and PI-3. Intuition PI-2 concerns the presence of phenomenal difference between situations of object-motion and self-motion. If the perspectival content contains both an object-element and a subject-element, the difference between the two types of motion can be explained by postulating that when object-motion is experienced, the motion-related properties are attributed to the object-element, and when self-motion is experienced they are attributed to the subject-element. However, as a consequence of denying the presence of the subject-element, proponents of the monadic conceptions have problems explaining the phenomenal differences between self-motion and object-motion in terms of differences in the representational content.

The problems of monadic theories with self-motion have been analysed in detail by Schwenkler (2014), who uses the rotating drum illusion as an example. When a stationary person is positioned in a rotating drum, at first she veridically perceives a moving drum, but after a while she experiences an illusion that she is rotating in a stationary drum. A proponent of the monadic conception may propose, without postulating a subject-element, that in the case of the initial veridical experience the content is: *there is a movement from left to right and the drum is moving*, while in the case of the subsequent illusory experience the

content is: *there is a movement from left to right and the drum is stationary.* Nevertheless, as observed by Schwenkler, such a proposal does not grasp the phenomenal difference between the self-motion and object-motion. In an illusory experience of self-rotation in a stationary drum, it seems that one does not merely experience that the drum is stationary and that there is some motion: this motion is experienced as happening to her. In fact, from the perspective of a monadic theory it may be more plausible to reject intuition PI-2 and argue that there is no specific phenomenology of self-motion which is distinct from the phenomenology of object-motion. The rejection of PI-1 may be then supplemented by an alternative explanation of examples such as the rotating drum illusion which does not refer to the phenomenology of self-motion. For instance (see Richardson 2017), it may be postulated that a phenomenal transition occurring in the rotating drum illusion does not concern changes in experiential content but consists in a fact that motion starts to be attributed to the visual field itself. Nevertheless, such alternative accounts are not without their own complications. For instance, an ontological question arises regarding whether the visual field is such an entity that in perceptual awareness motion may be attributed to it and not only to entities figuring in the content of an experience. Furthermore, while an attribution of movement to the visual field may seem plausible in the case of rotating self-motion, such a move is possibly less obvious in the case of forward self-motion, as in such a case the borders of the visual field seem to be stable. However, as my goal is to develop a theory which accommodates PI-2 together with other phenomenal intuitions, detailed considerations about possible developments of theories which reject PI-2 are outside the scope of this paper.

Regarding intuition PI-3, the monadic theories do not offer a characteristic of content which would be able to determine that objects seem to be directionally related to the subject's body. Of course, a monadic content may specify that one object is in some direction  $D1$  and another one is in distinct direction  $D2$ . They may also accept that information provided by the bodily senses at least partially determines whether a given direction is  $D1$  or  $D2$ . However, to represent that the direction  $D1$  is such that an object located in this direction is closer to the left than the right hand, additional content is required which carries information about the current arrangement of bodily parts. Hence, the monadic theories do not accommodate intuition PI-3, rather they reject it by denying that perspectival experiences represent objects as related to the body and its parts.

In consequence, while the content proposed by the monadic theories is able to explain the lack of visual phenomenology associated with the subject-element (intuition PI-1) and the presence of stable topological phenomenology (intuition PI-4), monadic theories do not offer content which accommodates intuitions PI-2 (phenomenal difference between self-motion and object-motion) and PI-3 (bodily character of directional phenomenology).

## 2.2. Self-location theories

According to self-location theories visual, perspectival experiences have content involving both an object-element and a subject-element. Usually, the subject-element is named by an indexical term such as 'I' or 'me', or is characterised as 'self', and the proposed perspectival content is like *an object-element stands in a distance and direction relation to me* (e.g. Schwenkler 2014; Peacocke 1992, 30–40; Smith 2002, 145; Zahavi 1999, 90–110). Due to the inclusion of a subject-element, self-location theories can easily accommodate intuition PI-2. The content of experiences representing object-motion is distinct from the content of experiences representing subject-motion, since in the first case movement is attributed to the object-element and in the second one to the subject-element. Similarly, the self-location theories have no problems in accounting for PI-4 as nothing in their formulation suggests that the topological organisation of visual directions is not stable.

On the other hand, the self-location theories have difficulties in accommodating intuition PI-1 as it seems that if a subject-element is present in the content of a visual experience, then it should be associated with the visual phenomenal character. Some authors propose (in particular, see Peacocke 2001; 215–220 and also Recanati 2012) that a subject-element is present within the content of a visual perspectival experience, but it does not contribute to its phenomenal character. While such a position technically satisfies intuition PI-1, as there is no visual phenomenal character corresponding to the subject-element, it also runs into a problem concerning intuition PI-2. If the phenomenal character of self-motion represents the subject as a moving entity, a question arises of what determines this phenomenal character. However, if the subject is a part of content but does not influence phenomenology, then it cannot be the element which accounts for the fact that the phenomenal character of self-motion represents the subject as moving.

Alternatively, as proposed by Sebastián (2022), it may be the case that an experience represents, for instance, 'I am moving', but the particular object to which the indexical 'I' refers does not figure in content. This proposal can be interpreted in two ways: (a) that subject does not figure in content, or (b) that the particular subject (like Mary) does not figure in content, but the subject-related content is a general content which involves 'a subject'. If (a) is chosen, then it is not obvious how content, which does not contain a subject-element, determines the phenomenology of self-motion in which a moving subject is represented. If (b) is selected, then a subject-element of content may determine the phenomenology of self-motion by being associated with visual phenomenology (but this entails the rejection of intuition PI-1) or may figure in content without influencing the phenomenology (but then it cannot determine the subject-involving phenomenology of self-motion). Another option inspired by Sebastián's (2022) framework is to weaken the intuition PI-2 by denying that in the self-motion case the subject is experienced as the entity to which the movement is attributed. This opens a possibility for postulating, consistently with intuition PI-1, that when self-motion occurs, the content such as 'I am moving' is realised by representing some movement-related property without additionally representing the subject-element to which the movement-related property is attributed. Similarly, as in the case of Richardson's (2017) proposal, I believe that such an option may be worth developing, but in this paper, I focus on formulating a theory which satisfies PI-2 in its stronger form proposed in Section 1.

Another way is to weaken intuition PI-1 by postulating that while there is no usual visual phenomenal character associated with the subject-element, such an element has some special visual phenomenology. For instance, it has been proposed that the subject-element has phenomenology characteristic for amodal completion (Schwenkler 2014, 17). In the typical case of amodal completion, for instance when a circular figure is partially occluded by a rectangular figure, we still experience that the circular figure continues behind the occluder. In consequence, it may be proposed that there is some visual phenomenal character associated with perception of the circular figure even if its obscured fragments are not associated with the usual colour or shape phenomenology. Nevertheless, it is unlikely that the perception of the subject-element such as 'I' or 'me' can be characterised in terms of the amodal completion. In visual experiences, the phenomenon of completion relies on the presence of visible fragments of an object. It is their arrangement which allows the

perceptual system to predict how the nonvisible fragments of the object looks like. However, such information is not available if the subject-element is simply characterised as 'self' or 'me' as such subject-element is not composed of some visible and some nonvisible fragments.

An attempt to avoid this problem is made by proposing that the subject element is not simply 'self' but rather 'my body' or 'bodily self' (see Cassam 1994, 52–53; Schwenkler 2014, 16). This actually makes referring to the idea of amodal completion more plausible. We are able to visually perceive fragments of our body, so it may be proposed that we also experience the rest of the body by amodally completing the visible fragments. Nevertheless, while this approach may help the self-location theories to accommodate intuition PI-1, it introduces a new problem related to intuition PI-2, because a visually represented body is not phenomenally represented as 'my body' but is simply perceived in the same way as any other object in the visual space, i.e. as something occupying some fragment of space, having colour, shape and size. For instance, in the rubber hand illusion experiments (see Longo et al. 2008), in order to evoke a feeling that a rubber hand belongs to a person, it is not enough to visually present a participant with plausibly positioned and realistically looking hand. What is required is the additional tactile input provided to the real hand hidden out of sight which is correlated with the visible stroking of the rubber hand.

In consequence, the visual phenomenology associated with the visual body perception is unlikely to be the right one to account for the difference between object-motion and self-motion. If the subject-element of a perspectival experience is a visually represented body, then the phenomenology of self-motion is not in an important way distinct from the phenomenology of object-motion, as in both cases the motion is attributed to an object presented in the field of vision. Nevertheless, an important intuition regarding the phenomenology of self-motion, is that during self-motion we experience that we are moving and not merely that the movement concerns one of the visible objects.

Similar problems occur when the subject-element is characterised in spatial terms as the 'location of the self' (Schwenkler 2014, 18) or simply as some location  $L$  which, in fact, is the location of the perceiver (Mitchell 2021). As with the body, while it may be the case that a location is perceived by means of amodal completion, attributing motion to a location does not seem to adequately determine the phenomenal character of self-motion experiences in which motion is felt as regarding the subject itself. In fact, the situation with location is more problematic

than with the body as it is less plausible that vision represents that locations are moving.

Furthermore, the self-location theories have limited abilities to accommodate intuition PI-3 even if they characterise the subject-element as a body or a bodily self. It is so because to actually help in determining the appropriate actions towards objects, the directional phenomenology cannot simply represent that an object is related to the body, but should characterise relations between an object and bodily parts which can be used in conducting actions. In other words, accommodating intuition PI-3 requires postulating that perspectival experiences not only represent that there is a body, but that parts of the body are arranged in a certain way. Differences in such arrangements can, in fact, determine the directional phenomenology. For example, the same object in the same position within the visual field may be represented as being to the left in virtue of representing relations to the arrangement of bodily parts occurring when a person stands on her feet. However, when a relation to the arrangement of bodily parts changes as a person stands on her head, the same object in the same position within the visual field may be represented as being to the right.

Overall, the self-location theories are developed in two directions. According to the first one, they characterise the subject-element simply as 'I' or 'me.' This accommodates intuition PI-2, but leads to a problem with intuition PI-1, as it is unclear why an element of visual content is not associated with visual phenomenal character. To solve the problems with intuition PI-1, a different approach can be developed in which the subject-element is specified in terms of a body or a location. Nevertheless, this reverses the problem, since while intuition PI-1 may be accommodated, a problem concerning intuition PI-2 occurs. Furthermore, self-location theories do not characterise content in a way that fully accommodates intuition PI-3. On the other hand, they do not run into difficulties with intuition PI-4.

### **2.3. The agentive theory**

A theory specifically tailored to account for intuition PI-3 has been proposed by Alsmith (2017). The main intuition guiding his conception is that the presentation of the subject-element in perspectival experiences is connected with the abilities for conducting actions towards objects. Hence, I refer to Alsmith's theory as the 'agentive theory.' While this theory has not been developed to specifically address visual perspectival experiences, it can be easily applied in this context.

Relying on the empirical state of the art, Alsmith demonstrates that representing an object as positioned in an egocentric, perspectival space, which is required for successful conduct of actions, involves utilising information regarding its position in multiple reference frames (Alsmith 2017, 2021; see also Briscoe 2009, 2021). These frames are 'embedded' in various bodily parts, such as head, torso, or a hand. A frame is embedded in a bodily part if its point of origin is positioned in this part and movements of the part influence the perspectival properties of an experience (e.g. whether an object is to the left or right).

Relying on these observations, Alsmith proposes that a perspectival experience represents an object-element as standing in egocentric relations to various bodily parts in which the appropriate reference frames are embedded. Nevertheless, these bodily parts are not represented as separate but as parts of the single bodily structure. This allows the statement that while an object-element is represented as related to a variety of bodily part, it is also related to a single, complex subject-element: the whole body. To express this idea Alsmith uses the notion of 'partial identity': when, for instance, an object-element is represented as related to a hand, it is also represented as related to the body itself, as the body is partially located where the hand is. To summarise, according to the agentive theory, a perspectival experience has a content of the following general form: *there are bodily parts  $P_1, \dots, P_n$  such that an object-element  $X$  stands in some distance and direction relation to each of  $P_1, \dots, P_n$ , and parts  $P_1, \dots, P_n$  compose the subject-element that is the whole bodily structure.*

The agentive theory is well-suited to accommodating intuition PI-3. The proposed perspectival content specifies that an object-element stands in spatial relations to various bodily parts, and that these parts stand in various relations to each other, so it can plausibly determine the directional phenomenology representing the way in which an object is related to the body. Nevertheless, accounting for the other intuitions is more problematic for the agentive theory if it is applied to visual experiences. The problems with intuitions PI-1 and PI-2 are similar to those observed in the context of self-location theories. First, it is not obvious how the agentive theory is able to combine the presence of a complex subject-element of visual content with intuition PI-1 stating that there is no visual phenomenology corresponding to the subject-element. Second, if the subject-element of a visual, perspectival experience is characterised as body, then, as observed in the previous section, a problem with intuition PI-2 arises, because body is visually represented in a similar way to any other object in the visual field so it is

unlikely that attributing motion to such subject-element can account for the phenomenology of self-motion.

However, the agentive theory also has some specific problems related to intuition PI-4. According to this theory, an object-element is represented as related to various bodily parts, each with its own embedded frame of reference. Because these frames of reference are embedded in distinct bodily parts, and many of these parts may, to some degree, move independently, the spatial relations between distinct frames of reference can change from moment to moment. In the context of intuition PI-4 this creates a problem, as the topological structure of perspectival experiences becomes unstable. For instance, let's consider two reference frames:  $F_a$  embedded in part  $A$  and  $F_b$  embedded in part  $B$ . At one moment, due to the relative position of  $A$  and  $B$ , frames  $F_a$  and  $F_b$  partially overlap such that some egocentric directions constituting them stand in topological connectedness relations. However, at a distinct moment, parts  $A$  and  $B$  may be further away such that their embedded frames of reference are disjoint, so the same directions are not connected. Such possibilities make it difficult to accommodate intuition PI-4 which states that the topological phenomenology, determined by connectedness relations between egocentric directions, is stable and is not modified by the changes in the directional phenomenology. In contrast to intuition PI-4, the content postulated by the agentive theory suggests that topological phenomenology supervenes on the way in which objects are represented as related to various parts of the bodily structure. Alsmith (2021) suggests that his proposal provides a form of unity of various reference frames as all of them are related to a single agent. However, while such unity may allow successful action to be conducted regardless of the dynamically changing relation between reference frames, it is less clear how it can explain the stability of the topological structure of visual perspectival experiences.

Overall, the agentive theory does not have a problem in accommodating the intuition PI-3. On the other hand, the agentive theory cannot easily account for intuition PI-4 – a difficulty which is not present in the context of monadic and self-location theories. Furthermore, the agentive theory faces similar complications with intuitions PI-1 and PI-2 as self-location theories.

#### **2.4. Two dilemmas**

The above analyses of the major theories of perspectival experiences allows formulating the two main dilemmas which make it difficult to

propose a theory which accounts for all the major phenomenal intuitions. The first concerns the tension between intuitions PI-1 and PI-2. Monadic theories, by denying the presence of the subject-element of content easily satisfy intuition PI-1, but have a problem in accounting for intuition PI-2 as it is unclear how content without a subject-element determines the phenomenology of self-motion. On the other hand, the self-location theories introduce the subject-element characterised as 'I,' which allows the phenomenal difference between object-motion and self-motion to be explained, instead they have problems with intuition PI-1 as the absence of visual phenomenology associated with the subject-element is not explained. This problem may be resolved by characterising the subject-element in terms of a body or a location and referring to the idea of amodal completion, but such solutions reintroduce the difficulties related to intuition PI-2, as these alternative accounts of the subject-element are not suited to explaining the phenomenology of self-motion. Overall, the first dilemma concerns the conflict between a requirement to explain the difference between the object-motion and self motion (intuition PI-2), which can be plausibly done by introducing the subject-element of content, and the intuition that there is no visual phenomenology associated with such a subject-element (intuition PI-1).

The second dilemma concerns the tension between intuitions PI-3 and PI-4. The monadic and self-location theories do not have problem accommodating intuition PI-4 as they may explain the presence of a stable topological phenomenology by postulating a stable structure constituted by visual egocentric directions. On the other hand, these theories do not characterise the perspectival content in a way which is able to fully account for the directional phenomenology postulated by intuition PI-3. This problem is solved via the agentive theory by proposing that an object element is represented as positioned in various egocentric frameworks embedded in distinct bodily parts. However, while this allows intuition PI-3 to be satisfied, it leads to problems with accounting for the stability of topological phenomenology postulated in intuition PI-4.

In the subsequent sections, I offer a characterisation of the content of visual perspectival experiences which is able to resolve both the above dilemmas. My solution may be treated as an extension of Alsmith's agentive theory. I accept the core claim of Alsmith's proposal that a perspectival experience represents that an object-element stands in spatial relations to various bodily parts, and I supplement it with two other claims: that the complex bodily subject-element is experienced in virtue of bodily awareness (this is explained in Section 3 in the context of

tension between PI-1 and PI-2), and that there is a distinction between egocentric and structural contents (this is explained in Section 4 in the context of tension between PI-3 and PI-4).

### 3. Subject-element as bodily structure

It seems that accounting for the intuition PI-2 requires postulating a content of visual perspectival experiences containing a subject-element. However, according to the intuition PI-1 there is no visual phenomenal character associated with this element. I believe that the dilemma can be resolved by postulating that there is a phenomenal character related to the subject-element, but this phenomenal character is not visual. This has been earlier suggested by Zahavi (1999, 90–100), who proposed that in a perspectival experience the body is accessible through kinesthesia (see also Bermúdez 1998 for an idea that proprioception allows for differentiating self from non-self). Below, I develop this idea by postulating the bodily content of perspectival experiences and argue that it can plausibly resolve the tension between intuitions PI-1 and PI-2.

By bodily content I mean content provided by the mechanisms of bodily awareness, such as proprioception, kinesthesia, and sense of balance, which represent the body 'from the inside' (see de Vignemont 2014). Such mechanisms, utilising, *inter alia*, information gathered by receptors in joints, muscles and tendons, provide us with a sense of bodily position and arrangement of bodily parts (see Longo 2010; Schwoebel and Coslett 2005). For instance, even without visual input, in virtue of bodily awareness, we are able to recognise whether our arm is straight or bent, and whether our head is turned towards the left or the right. In the literature regarding bodily representations, such mechanisms are often treated as relevant for creating structural representations of the body which specify how bodily parts are connected to each other and the current spatial relations between them (see Hochstetter 2016; Longo and Haggard 2010; Proske and Gandevia 2012; de Vignemont 2010).

Relying on the above observations, I propose that the subject-element of visual perspectival experiences is the represented bodily structure characterising the relations between bodily parts. The bodily characterisation of this structure allows the problem which threatens the variants of self-location theories which characterise the subject-element as amodally completed, visual representation of the body to be resolved. The problem is that, in vision, the body is represented as any other visual object, so such a representation cannot account for the phenomenology of self-

motion, which suggests that motion is attributed to us and not to some perceived object. This difficulty does not arise if the representation of the body is provided by bodily awareness, because except for specific cases of deficits regarding bodily ownership (see de Vignemont 2020), phenomenal character associated with bodily awareness represent its objects not as some external objects, but as fragments of our body. In consequence, such characterisation of the subject-element allows intuition PI-2 to be satisfied. In the case of object-motion, movement is attributed to a visually represented, external object, and in the case of the self-motion, movement is attributed to the body which is experienced in virtue of bodily awareness. The proposed characterisation of perspectival content also accommodates intuition PI-1: There is no visual phenomenology associated with the subject-element, as such phenomenology is nonvisual.

It should be noted that the above characterisation of the subject-element does not entail that a person who has lost some abilities that were provided by bodily senses cannot have visual experiences with any perspectival character. First, the bodily awareness is partially provided by stable, offline representations which may be present even if sensory input is unavailable (e.g. Hochstetter 2016; Longo and Haggard 2010; de Vignemont 2010). Second, in order to resolve the tension between intuitions PI-1 and PI-2 it is not necessary to claim that there is no perspectival phenomenology which can occur without representing the subject-element. For instance, some such phenomenology may occur in virtue of the presence of certain patterns of changes regarding the visible objects.

Furthermore, I do not aim to provide a detailed description of the specific parts and relations composing the subject-element, but merely to propose that the subject-element is a bodily structure experienced 'from the inside' (see Bermúdez 1998 for a philosophical approach to such structure and Longo et al. 2020 for results regarding the role of head and torso in perspectival experiences). In addition, my proposal does not require that the body is particularly phenomenally salient in perspectival experiences. A common observation in the literature regarding bodily awareness is that in the usual cases the body is only peripherally present in our consciousness (e.g. Elder 2013; Hochstetter 2016; Kinsbourne, 1995; Lana 2018; Marcel 2003). Its presence becomes more central only when something attracts attention to the body, for instance, when our intended movement fails for some reason. Nevertheless, such peripheral presence is still a form of the consciousness of the body which helps, for instance, in initiating the correct actions towards the perceived objects.

The above remarks show that bodily content is a suitable tool for resolving the tension between intuitions PI-1 and PI-2. However, it still may be asked whether it is plausible to postulate that perspectival experiences have such content. In particular, one may propose that while information from mechanisms constituting bodily awareness causally influences the content of perspectival experiences, such experiences do not have bodily content. In this context, it is worth observing that the intuition PI-3 already states that the directional phenomenology involves a relation to the subject's body. To account for this intuition, the content of perspectival experiences should determine the phenomenal presence of the body. Of course, introducing bodily content can easily serve this task. However, it is less obvious how it can be done if the mechanisms of bodily awareness only causally affect the perspectival content. In particular, if such causal influence merely leads to a presence of a visually experienced body or does not involve the introduction of any element of content at all, then it would be difficult to combine intuitions PI-1, PI-2 and PI-3. This is because if the bodily subject-element is visually experienced then PI-1 is rejected, and if no element of content is introduced it is unclear what determines the subject-involving phenomenology of self-motion and the bodily aspects of directional phenomenology (see p. 14).

Nevertheless, even if the introduction of bodily content seems plausible given the acceptance of intuition PI-3, there may be other reasons which justify rejection of the postulate that perspectival experiences involve bodily content. Below, I consider five such reasons and argue that they do not significantly threaten the postulate regarding the presence of bodily content. The first reason is about the access to bodily information. The second concerns the possibility of the presence of bodily content in visual experiences. The third suggests that instead of postulating that visual perspectival experiences have bodily content it may be accepted that contents of purely visual and purely bodily experiences are somehow coordinated. The final two reasons are related to arguments formulated by Schwenkler (2014) in the context of the rotating drum illusion.

First, there may doubt as to whether the processes involved in the creation of perspectival experiences have access to and use information provided by mechanisms related to bodily awareness, which allows the subject-element to be represented as a structure composed of bodily parts. Nevertheless, currently, it is well-established that representing ego-centric locations of visually represented objects requires information

regarding not only information obtained by visual mechanisms from retinal receptors, but also regarding the position of the body to be utilised (see Alsmith 2017; Briscoe 2009, 2021). For instance, without combining visual and bodily information it would be difficult to experientially distinguish between cases in which a retinal input changes due to movement of an object in the visual field or due to a movement of the head when the object is stationary.

Similarly, without utilising both visual and bodily information in the creation of a perspectival experience, it would be unclear why such an experience serves as a basis for successful bodily actions regarding perceived objects. Such actions, such as grabbing an object, seem to require information about the current spatial relation between an object and bodily parts such as hand, arm, and torso. However, one may propose that information regarding visually guided actions is mainly processed by the dorsal stream and content related to such information is likely to be unconscious (see Brogaard 2011; Gallese 2007; Kozuch 2015; Wu 2014 for discussion regarding relations between consciousness and the dorsal stream). Nevertheless, I believe that one does not have to assume that bodily content of perspectival experiences is solely the unconscious dorsal content. First, while fine-grained control of visually guided actions may be unconscious, such actions have also conscious aspects related to, for instance, initiating and planning general course of actions as well as recognising the actions' success or failure (e.g. Kinsbourne, 1995; Wong 2015). It seems likely that such conscious elements of actions may be conducted relying on conscious bodily content. Second, the bodily information relevant for conducting visually guided actions may be partially provided by representation, such as 'body image', usually associated with conscious bodily perception (e.g. Carruthers 2008; de Vignemont 2010). For example, such representation may inform about the general structure and the current position of bodily parts, which allows determining the general pattern of action that is suitable given the position of an object. In fact, it is not uncommon to propose that there is no strict division between bodily representations associated with unconscious action guiding and conscious bodily perception, as they may be co-created and share some content (see Pitron, Alsmith, and de Vignemont 2018).

Second, even if information regarding the bodily structure is utilised when forming visual perspectival experiences, it may be doubtful whether some nonvisual content, associated with nonvisual phenomenal character, can in fact figure in such experiences. One may propose that

visual perspectival experiences can have only visual content, not bodily content. In order to resolve this problem, I propose that what we intuitively treat as a visual perspectival experience is likely to be a multimodal experience representing a visual object in relation to the bodily structure. Such a situation is by no means exceptional, since our perceptual experiences are commonly multimodal experiences in which elements associated with distinct modalities are combined by intermodal, spatial, or temporal relations. For instance, many ordinary experiences are audiovisual, and represent that a visual element is in spatial and temporal distance from an auditory element (see Briscoe 2017; O'Callaghan 2015; Richardson 2014). Similarly, everyday experiences often involve binding relations which combine properties associated with distinct modalities with a single object or event (see Kubovy and Schutz 2010; Macpherson 2011; O'Callaghan 2017). Hence, characterising visual perspectival experiences as visuo-bodily experiences structured by the presence of spatial relations does not introduce some strange exception, but in fact characterises perspectival experiences by referring to the type of multimodality which commonly occurs in the human perception. The acceptance that visual perspectival experiences are multimodal visuo-bodily experiences does not mean that we have to abandon an intuitive division between what is experientially 'visual' and 'bodily'. This is because even if the majority of our experiences are multimodal they may have aspects or parts which are unimodal (for instance, see O'Callaghan 2017 for various ways in which multimodal experiences may be structured).

Third, it may be proposed that there is no reason for introducing the bodily content, as the role of the bodily component in visual, perspectival experiences can be accounted for by postulating the presence of two unimodal experiences, one visual and the second related to bodily awareness, which are somehow coordinated. However, an important argument against such a view was proposed by Briscoe (2021). It states that analysing the perspectival aspects of perception in terms of separate visual and bodily experiences leads to an implausible conclusion that motion of visually tracked objects is not perceptually represented. If eyes are tracking a moving object, its position in the retinocentric frame of reference remains constant, thus relying solely on visual information, no movement is attributed to the object. Given that, it may be asked in virtue of what the movement of an object is perceptually represented. It seems that this additional information has to concern the body. In particular, even if the retinal position is not changing, the object is experienced as moving, because there is information that the subject's eyes are

moving. In other words, representation of the tracked object's motion requires information provided by reference frames other than the retino-centric frame and these frames concern the position of an object in relation to some bodily parts.

However, the bodily information about the movement of eyes alone does not concern the movement of the seen object. Hence, if perception of a tracked object is analysed in terms of a purely visual experience and a purely bodily experience, then neither of these experiences attribute movement to the perceived object. The visual information does not inform about changes in the object's position and bodily information informs only about changes in position of the bodily parts and does not concern the seen object. In consequence, the object-movement has to be represented in some postperceptual way, for instance by forming a belief. On the other hand, if a visual perspectival experience is a multi-modal visuo-bodily experience, this problem does not arise. Such an experience, in virtue of combining visual and bodily information, may represent the movement of an object due to representing changing spatial relations between the object and the bodily parts.

Finally, there are also two more specific arguments against bodily content of perspectival experiences formulated by Schwenkler (2014) in the context of discussion regarding the rotating drum illusion. First, referring to situations of ambiguous perception, as in the case of the Necker cube, he states that the same visual stimulus may lead to distinct visual experiences. Hence, it may be unnecessary to postulate any nonvisual element to account for the difference between a veridical experience of a moving drum and an illusory experience of self-motion, as these two experiences may result from distinct interpretations of the same visual stimuli. Nevertheless, a proper explanation of the transition between these experiences has to specify how the representational content changes, such that it both determines the initial phenomenology of object-motion and the later phenomenology of the self-motion. However, as argued in Section 2.2, the self-location theories do not postulate the content, which plausibly provides such an explanation while satisfying both intuitions PI-1 and PI-2. Depending on the version of self-location theory, the provided content does not explain the lack of visual phenomenology associated with the subject-element, or it is not suitable for accounting for the phenomenology of self-motion. On the other hand, introducing the bodily content allows these difficulties to be avoided.

Second, Schwenkler argues that if the illusory experience of self-motion in the drum illusion occurred due to bodily and not visual

factors, then focusing on the visual aspects of the experience should make the illusion less vivid. However, this is not the case, as the illusion becomes weaker when one focuses on her own body and is, in fact, stronger when the focus is on the visual aspects of the experience. According to Schwenkler, this suggests that the illusion of self-motion happens due to the visual aspects of an experience, since focusing on them makes the illusion stronger. Nevertheless, such results can also be accommodated by the account according to which the visual perspectival experiences include both visual and bodily aspects. From this perspective, visual aspects of the considered experience do not constitute the feeling of self-motion, but are casual factors which contribute to the fact that the motion is attributed to the body represented in virtue of bodily awareness. Such a situation is not unusual as visual stimuli often – as demonstrated by the phenomenon of ‘visual kinesthesia’ – serve as a cue which helps in determining the presence of self-motion. In consequence, focusing on these visual cues makes the illusion of self-motion stronger. On the other hand, focusing on the bodily aspects of experience weakens the illusion as illusion-generating visual data are treated as less significant while higher priority is ascribed to veridical bodily data which inform that there is no bodily motion.

The above considerations show that the dilemma between intuitions PI-1 and PI-2 may be plausibly resolved by characterising visual perspectival experiences as visuo-bodily experiences whose subject-element is the represented body by means of the bodily awareness. In the next section, I show how introducing the additional distinction within perspectival content may help in resolving the tension between intuitions PI-3 and PI-4.

#### **4. Structural content of visual experiences**

In order to resolve the conflict between intuitions PI-3 and PI-4 one has to characterise the content of visual, perspectival experiences in such a way that it determines both the bodily aspects of directional phenomenology and the stability of topological phenomenology. By treating the visual, perspectival experiences as multimodal visuo-bodily experiences, as argued in the previous section, and by using ideas provided by Alsmith’s agentive theory (Alsmith 2017), one can easily account for intuition PI-3. According to this approach, a perspectival experience represents that an object-element stands in spatial relations to bodily parts, experienced in virtue of bodily awareness, which jointly compose a complex subject-

element which is the holistic bodily structure. The patterns of relations between an object-element and parts of the subject-element determine the directional phenomenology of an experience, for instance whether an object is experienced as being to the right or left. However, a question regarding intuition PI-4 remains: How can the content of visual, perspectival experiences guarantee the stability of topological phenomenology, i.e. that the connectedness relations between directions constituting the visual space are not influenced by the changes in the represented arrangements of bodily parts?

In the previous section, when discussing Schwenkler's (2014) arguments against the bodily content of perspectival experiences, I have noticed that an experience of self-motion can be evoked by certain patterns of visual input. For instance, in the phenomenon of 'visual kinesthesia,' the visual cue of self-motion consists in the fact that objects in the visual field are experienced as uniformly expanding. This suggests that the subject is moving through the static environment and is passing by the perceived objects (see Harris, Jenkin, and Zikovitz 2000; Lappe, Bremmer, and van den Berg 1999; Wexler et al. 2001). Similarly, when a single perceived object is moving outside the visual field, it does not serve as a cue of self-motion. However, when all seen objects are uniformly moving towards an edge of the field of view, then it constitutes a cue that the subject has changed position while objects are stationary. These examples suggest that a visual experience serves as a cue of self-motion, not only because it represents the changing relations of objects to the subject's body, for instance that objects are getting closer. It also represents relations of objects to the structural elements of the visual field, for instance that objects are expanding, so they encompass more visual directions, and that they are getting closer to the edges of the visual field.

Relying on the above remarks, I propose to distinguish between the 'egocentric content' of visual perspectival experiences and their 'structural content'. I treat these types of content as components of the perspectival content which determines the perspectival phenomenology. More precisely, egocentric content determines the body-related directional phenomenology characterised in PI-3, while structural content determines the experiential stability and topological phenomenology characterised in PI-4.

The egocentric content specifies how object-elements are related to the subject-element. In the case of my proposal, this subject-element is the bodily structure represented in virtue of bodily awareness. In

consequence, egocentric content characterises relations between perceived objects and bodily parts which compose the subject-element. Such content is able to determine a directional phenomenology which concerns relations between objects and bodily parts. The pattern of such relations may determine the directional relations to the whole subject-element, understood as a structure comprising bodily parts. As already pointed out in Section 3, I do not aim to postulate a specific number of parts that compose the represented bodily structure and the number of egocentric relations that can be simultaneously represented between such parts and the perceived objects. I believe that the establishment of these quantitative aspects must come as a result of detailed empirical investigations.

On the other hand, the structural content characterises the relations of an object-element to structural elements of the visual field, e.g. its borders and various egocentric directions composing the visual field. These two types of content cannot be identified with each other as they determine distinct aspects of visual perspectival experiences. For example, the changes in structural content may determine that an object-element is getting closer to an edge of the visual field, but they alone do not determine whether the object is moving left or right as it requires egocentric content relating the object to the bodily structure. Similarly, changes in egocentric content may determine that an object-element is moving to the left, but does not carry information that the object is going to cross the edge of the visual field and stop to be visible. It is so because egocentric content specifies the relations of the object-elements to the bodily structure but not to the borders of the visual field. In the literature regarding the philosophy of perception there is disagreement regarding whether the structural elements of an experience should be included as elements of the representational content (e.g. Phillips 2013; Soteriou 2011). I believe that the proposed structural content is a form of representational content as it contributes to the determination of accuracy conditions of perspectival experiences (see Siegel 2010). For instance, in virtue of such content it may be represented that if two objects are moving to the left one will go beyond the visual field earlier than the second one.

Adopting the distinction between egocentric and structural content allows visual perspectival experiences to be characterised in a way that can accommodate both intuitions PI-3 and PI-4. To observe this, let's start from considering once again the Buckingham Palace example which may pose a problem for monadic and self-location theories

because it suggests the directional phenomenology is partially determined by the content concerning the bodily posture. However, the Buckingham Palace example is also problematic for the agentive theory, because there are bodily changes, such as rotating torso without moving head, which may introduce some modifications to the directional phenomenology that are not accompanied by a change in positions of objects in the visual field. It is not obvious how the agentive theory can account for this phenomenal stability despite the occurrence of changes in spatial properties of bodily parts. For instance, it may be proposed that while the directional phenomenology is determined by relations to various bodily parts, there is a special frame of reference (e.g. head-centred frame) which determines the topological phenomenology (see Alsmith 2021). Nevertheless, explaining how such a special framework can determine topological phenomenology requires postulating something similar to structural content which specifies the position of perceived objects in relation to the structural elements of the visual field.

The above problems are not present if a distinction between egocentric and structural content is adopted. Changes in egocentric content concern the changes in relations between objects and bodily parts. In consequence, egocentric content can determine the bodily-dependent changes of directional phenomenology. It should be noted that an acceptance of this characterisation of egocentric content does not entail that relations to each bodily part equally determine the phenomenal character of perspectival experiences. In particular, the impact of relations to eyes and head on the experienced direction of objects may be stronger than, for instance, the impact of the relations to the hands.

However, some changes in egocentric content may occur without changes in the structural content which specifies the relations of an object to the topological structure of visual directions. In consequence, it is possible that directional phenomenology changes while the object's distance to the edges of the visual field is experienced as being constant. Similarly, even if egocentric content changes, in virtue of the structural content objects may be experienced as standing in some stable relations to the visual field's 'starting point' positioned in proximity to the eyes.

The Buckingham Palace example provides a specific case of topological phenomenal stability despite bodily changes. However, intuition PI-4 expresses a more general statement that visual, perspectival experiences

have a stable topological phenomenology which is independent from changes concerning the directional phenomenology. The topological phenomenology regards the fact that the visual field is a structure made of visual directions and is stable because connectedness relations between these directions remain the same regardless of bodily posture. For instance, if two visual directions are positioned next to each other, then, irrespective of the bodily movements, they will stay that way and do not become, for instance, disjoint or separated by some additional directions. As argued in Section 2.3, accounting for the stability of the topological phenomenology is difficult within the framework of the agentive theory. If perspectival phenomenal character is fully determined by egocentric relations within various egocentric frameworks, the bodily movements are likely to modify the topological phenomenology. On the other hand, the introduction of structural content allows the stability of topological phenomenology to be accounted for, and so satisfying intuition PI-4, by stating that every perceived object, regardless of the bodily posture, is experienced as standing in relations to the same topological arrangement of structural elements of the visual field.

More precisely, according to my proposal, in visual, perspectival experiences, object-elements are represented as standing in two types of relations. First, an object-element is related to bodily parts comprising a represented bodily structure. This is egocentric content which determines the directional phenomenology of experiences characterising what is to the left or what is higher relative to parts of the body. Second, an object-element is related to structural elements of the visual field, i.e. visual directions which compose its topological structure. This topological structure is stable: Regardless of any bodily movements and changes in perceived objects, the connected visual directions remain connected. The structural content determines the topological phenomenology, due to which it is experienced that objects are positioned in the stable structure of the visual field.

Overall, according to the proposed theory, a visual perspectival experience has content of the following general form: *An object-element X (a) stands in spatial relations to bodily parts  $B_1, \dots, B_n$ , which compose a single bodily structure, and (b) stands in spatial relations to visual directions  $V_1, \dots, V_n$  which compose, by standing in connectedness relations, a topological structure of the visual field.* Such characterisation allows all phenomenal intuitions to be accommodated. First, intuition PI-1 is satisfied as the subject-element is not associated with visual phenomenal character. The

inclusion of such subject-elements also allows intuition PI-2 to be accounted for: in the case of object-motion, movement is attributed to an object-element while in the case of self-motion it is attributed to the subject-element. Furthermore, the bodily character of directional phenomenology, postulated by intuition PI-3, is taken into account because such phenomenology is determined by the egocentric content specifying the spatial relations between an object-element and fragments of the bodily structure. Nevertheless, the stability of topological phenomenology required by intuition PI-4 is also accounted for, as it is determined by the structural content specifying the relations between object-elements and the visual directions forming a stable topological structure of the visual field.

As stated in Section 2.4, this solution may be interpreted as an extension of Alsmith's agentic theory, as it accepts its core claim concerning the structured bodily subject-element and adds additional proposals in order to account for all the phenomenal intuitions. It is also not strictly incompatible with the self-location theories; however, it requires a significant modification consisting of interpreting the subject-element as a structured body experienced in virtue of bodily awareness. This is not what self-location theories usually propose, as they claim that a subject-element is experienced visually or that it is a part of content which does not affect the phenomenal character. On the other hand, my proposal is incompatible with the monadic theories: their main assumption is that the subject-element does not figure in the representational content, but my theory rejects this proposal.

## 5. Conclusions

The attempts to provide a characterisation of content of visual, perspectival experiences faces two major dilemmas. First, there is a problem of how to account for the intuition that there is no visual phenomenal character associated with the subject-element while allowing for the phenomenal difference between object-motion and self-motion. Second, it is not obvious how the representational content may determine both those aspects of phenomenology which concerns the current arrangement of bodily parts, and those which does not have bodily aspects. I argue that a solution to these dilemmas can be successfully reached via two steps: (a) recognising that visual perspectival experiences are, in fact, multimodal visuo-bodily experiences and (b) distinguishing between egocentric and structural contents.

## Acknowledgements

The author would like to thank Frederique de Vignemont and anonymous reviewers for their comments on the earlier versions of the paper.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

The work was supported by the Narodowe Centrum Nauki (Poland) grant 2018/31/D/HS1/00363.

## References

- Alsmith, A. J. T. 2017. "Perspectival Structure and Agentive Self-Location." In *The Subject's Matter: Self-Consciousness and the Body*, edited by F. de Vignemont, and A. J. T. Alsmith, 263–287. Cambridge, MA: The MIT Press.
- Alsmith, A. J. T. 2021. "The Structure of Egocentric Space." In *The World at Our Fingertips*, edited by F. de Vignemont, A. Serino, H. Y. Wong, and A. Farné, 231–250. Oxford: Oxford University Press.
- Bayne, T. 2009. "Perception and the Reach of Phenomenal Content." *The Philosophical Quarterly* 59 (236): 385–404. doi:10.1111/j.1467-9213.2009.631.x.
- Bennett, D. J. 2012. "Seeing Shape: Shape Appearances and Shape Constancy." *The British Journal for the Philosophy of Science* 63 (3): 487–518. doi:10.1093/bjps/axr018.
- Bermúdez, J. L. 1998. *The Paradox of Self-Consciousness*. Cambridge, MA: The MIT Press.
- Block, N. 2014. "Seeing-as in the Light of Vision Science." *Philosophy and Phenomenological Research* 89 (1): 560–572. doi:10.1111/phpr.12135.
- Brewer, B. 1992. "Self-location and Agency." *Mind; A Quarterly Review of Psychology and Philosophy* 101: 17–34. doi:10.1093/mind/101.401.17.
- Briscoe, R. E. 2009. "Egocentric Spatial Representation in Action and Perception." *Philosophy and Phenomenological Research* 79 (2): 423–460. doi:10.1111/j.1933-1592.2009.00284.x.
- Briscoe, R. E. 2017. "Multisensory Processing and Perceptual Consciousness: Part II." *Philosophy Compass* 12 (12): e12423. doi:10.1111/phc3.12423.
- Briscoe, R. E. 2021. "Bodily Awareness and Novel Multisensory Features." *Synthese* 198 (Suppl 17): S3913–S3941. doi:10.1007/s11229-019-02156-2.
- Brogaard, B. 2010. "Strong Representationalism and Centered Content." *Philosophical Studies* 151: 373–392. doi:10.1007/s11098-009-9437-z.
- Brogaard, B. 2011. "Are There Unconscious Perceptual Processes?" *Consciousness and Cognition* 20: 449–463. doi:10.1016/j.concog.2010.10.002.
- Campbell, J. 1994. *Past, Space and Self*. Cambridge, MA: The MIT Press.
- Carruthers, G. 2008. "Types of Body Representation and the Sense of Embodiment." *Consciousness and Cognition* 17: 1302–1316. doi:10.1016/j.concog.2008.02.001.

- Cassam, Q. 1994. *Self and World*. New York: Oxford University Press.
- Chomansky, B. 2018. "On the Relation Between Visualized Space and Perceived Space." *Review of Philosophy and Psychology* 9: 567–583. doi:10.1007/s13164-017-0380-1.
- Cutter, B., and M. Tye. 2011. "Tracking Representationalism and the Painfulness of Pain." *Philosophical Issues* 21 (1): 90–109. doi:10.1111/j.1533-6077.2011.00199.x.
- de Vignemont, F. 2010. "Body Schema and Body Image—Pros and Cons." *Neuropsychologia* 48: 669–680. doi:10.1016/j.neuropsychologia.2009.09.022.
- de Vignemont, F. 2014. "A Multimodal Conception of Bodily Awareness." *Mind; A Quarterly Review of Psychology and Philosophy* 123 (492): 889–1020. doi:10.1093/mind/fzu089.
- de Vignemont, F. 2020. "What Phenomenal Contrast for Bodily Ownership?" *Journal of the American Philosophical Association* 6 (1): 117–137. doi:10.1017/apa.2019.34.
- Elder, A. 2013. "Proprioception, Anosognosia, and the Richness of Conscious Experience." *Journal of Consciousness Studies* 20 (3-4): 83–101.
- Evans, G. 1982. *The Varieties of Reference*. Oxford: Clarendon Press.
- Gallese, V. 2007. "The "Conscious" Dorsal Stream: Embodied Simulation and Its Role in Space and Action Conscious Awareness." *PSYCHE: An Interdisciplinary Journal of Research on Consciousness* 13 (1): 1–20.
- Gibson, J. J. 1986. *The Ecological Approach to Visual Perception*. Hillsdale: Lawrence Erlbaum & Associates.
- Green, E. J. 2016. "Representationalism and Perceptual Organization." *Philosophical Topics* 44 (2): 121–148. doi:10.5840/philtopics201644220.
- Green, E. J., and S. Schellenberg. 2017. "Spatial Perception: The Perspectival Aspect of Perception." *Philosophy Compass* 13 (2): e12472. doi:10.1111/phc3.12472.
- Gregory, D. 2013. *Showing, Sensing, and Seeming*. Oxford: Oxford University Press.
- Harris, L., M. Jenkin, and D. C. Zikovitz. 2000. "Visual and non-Visual Cues in the Perception of Linear Self Motion." *Experimental Brain Research* 135: 12–21. doi:10.1007/s002210000504.
- Hochstetter, G. 2016. "Attention in Bodily Awareness." *Synthese* 193 (12): 3819–3842. doi:10.1007/s11229-016-1141-x.
- Jagnow, R. 2012. "Representationalism and the Perspectival Character of Perceptual Experience." *Philosophical Studies* 157: 227–249. doi:10.1007/s11098-010-9634-9.
- Kelly, S. D. 2008. "Content and Constancy: Phenomenology, Psychology, and the Content of Perception." *Philosophy and Phenomenological Research* 76 (3): 682–690. doi:10.1111/j.1933-1592.2008.00164.x.
- Kinsbourne, M. 1995. "Awareness of One's Own Body: An Attentional Theory of its Nature, Development, and Brain Basis." In *The Body and the Self*, edited by J. L. Bermudez, T. Marcel, and N. Eilan, 205–224. Cambridge, MA: MIT Press.
- Kozuch, B. 2015. "Dislocation, not Dissociation: The Neuroanatomical Argument Against Visual Experience Driving Motor Action." *Mind & Language* 30 (5): 572–602. doi:10.1111/mila.12091.
- Kubovy, M., and M. Schutz. 2010. "Audio-visual Objects." *Review of Philosophy and Psychology* 1: 41–61. doi:10.1007/s13164-009-0004-5.
- Lana, K. 2018. "The Missing Pieces in the Scientific Study of Bodily Awareness." *Philosophical Psychology* 30 (5): 571–593. doi:10.1080/09515089.2017.1311999.

- Lappe, M., F. Bremmer, and A. V. van den Berg. 1999. "Perception of Self-Motion from Visual Flow." *Trends in Cognitive Sciences* 3 (9): 329–336. doi:[10.1016/S1364-6613\(99\)01364-9](https://doi.org/10.1016/S1364-6613(99)01364-9).
- Longo, M. R. 2010. "Implicit and Explicit Body Representations." *European Psychologist* 20 (1): 6–15. doi:[10.1027/1016-9040/a000198](https://doi.org/10.1027/1016-9040/a000198).
- Longo, M. R., and P. Haggard. 2010. "An Implicit Body Representation Underlying Human Position Sense." *PNAS* 107 (26): 11727–11732. doi:[10.1073/pnas.1003483107](https://doi.org/10.1073/pnas.1003483107).
- Longo, M. R., S. S. Rajapakse, A. J. T. Alsmith, and E. R. Ferre. 2020. "Shared Contributions of the Head and Torso to Spatial Reference Frames Across Spatial Judgments." *Cognition* 204: 104349. doi:[10.1016/j.cognition.2020.104349](https://doi.org/10.1016/j.cognition.2020.104349).
- Longo, M. R., F. Schüür, M. P. M. Kammers, M. Tsakiris, and P. Haggard. 2008. "What is Embodiment? A Psychometric Approach." *Cognition* 107: 978–998. doi:[10.1016/j.cognition.2007.12.004](https://doi.org/10.1016/j.cognition.2007.12.004).
- Macpherson, F. 2011. "Cross-modal Experiences." *Proceedings of the Aristotelian Society* 111: 429–468. doi:[10.1111/j.1467-9264.2011.00317.x](https://doi.org/10.1111/j.1467-9264.2011.00317.x).
- Marcel, A. 2003. "The Sense of Agency: Awareness and Ownership of Action." In *Agency and Self-Awareness: Issues in Philosophy and Psychology*, edited by J. Roessler, and N. Eilan, 48–93. Oxford: Oxford University Press.
- Mitchell, J. 2021. "Self-locating Content in Visual Experience and the 'Here-Replacement' Account." *Journal of Philosophy* 118 (4): 188–213. doi:[10.5840/jphil2021118414](https://doi.org/10.5840/jphil2021118414).
- Noë, A. 2004. *Action in Perception*. Cambridge: The MIT Press.
- O'Callaghan, C. 2015. "Not all Perceptual Experience is Modality Specific." In *Perception and its Modalities*, edited by D. Stokes, M. Matthen, and S. Biggs, 133–165. Oxford: Oxford University Press.
- O'Callaghan, C. 2017. "Grades of Multisensory Awareness." *Mind & Language* 32 (2): 155–181. doi:[10.1111/mila.12137](https://doi.org/10.1111/mila.12137).
- Peacocke, C. 1992. *A Study of Concepts*. Cambridge, MA: The MIT Press.
- Peacocke, C. 2001. "First-person Reference, Representational Independence, and Self-Knowledge." In *Self-reference and Self-Awareness*, edited by A. Brook, and R. C. DeVidi, 215–246. Amsterdam: John Benjamins Publishing Company.
- Perry, J. 1986. "Thought Without Representation." *Proceedings of the Aristotelian Society, Supplementary Volumes* 60: 137–151. doi:[10.1093/aristoteliansupp/60.1.137](https://doi.org/10.1093/aristoteliansupp/60.1.137).
- Phillips, I. 2013. "Hearing and Hallucinating Silence." In *Hallucination. Philosophy and Psychology*, edited by F. Macpherson, and D. Platchias, 333–359. Cambridge, MA: The MIT Press.
- Pitron, V., A. Alsmith, and F. de Vignemont. 2018. "How Do the Body Schema and the Body Image Interact?" *Consciousness and Cognition* 65: 352–358. doi:[10.1016/j.concog.2018.08.007](https://doi.org/10.1016/j.concog.2018.08.007).
- Prose, U., and S. C. Gandevia. 2012. "The Proprioceptive Senses: Their Roles in Signaling Body Shape, Body Position and Movement, and Muscle Force." *Physiological Review* 92: 1651–1697. doi:[10.1152/physrev.00048.2011](https://doi.org/10.1152/physrev.00048.2011).
- Recanati, F. 2012. "Immunity to Error Through Misidentification: What it is and Where it Comes from." In *Immunity to Error Through Misidentification: New Essays*, edited by S. Prosser, and F. Recanati, 180–201. Cambridge: Cambridge University Press.

- Richardson, L. 2014. "Non Sense-Specific Perception and the Distinction Between the Senses." *Res Philosophica* 91 (2): 215–239. doi:[10.11612/resphil.2014.91.2.4](https://doi.org/10.11612/resphil.2014.91.2.4).
- Richardson, L. 2017. "Sight and the Body." In *The Subject's Matter: Self-Consciousness and the Body*, edited by F. de Vignemont, and A. J. T. Alsmith, 239–262. Cambridge, MA: The MIT Press.
- Schellenberg, S. 2007. "Action and Self-Location in Perception." *Mind; A Quarterly Review of Psychology and Philosophy* 116 (463): 603–632. doi:[10.1093/mind/fzm603](https://doi.org/10.1093/mind/fzm603).
- Schwenkler, J. 2014. "Vision, Self-Location, and the Phenomenology of the 'Point of View'." *Noûs* 48 (1): 137–155. doi:[10.1111/j.1468-0068.2012.00871.x](https://doi.org/10.1111/j.1468-0068.2012.00871.x).
- Schwitzgebel, E. 2006. "Do Things Look Flat?" *Philosophy and Phenomenological Research* 72 (3): 589–599. doi:[10.1111/j.1933-1592.2006.tb00585.x](https://doi.org/10.1111/j.1933-1592.2006.tb00585.x).
- Schwoebel, J., and H. B. Coslett. 2005. "Evidence for Multiple, Distinct Representations of the Human Body." *Journal of Cognitive Neuroscience* 17 (4): 543–553. doi:[10.1162/0898929053467587](https://doi.org/10.1162/0898929053467587).
- Sebastián, M.Á. 2022. "First-Person Perspective in Experience: Perspectival de se Representation as an Explanation of the Delimitation Problem." *Erkenntnis*, doi:[10.1007/s10670-022-00564-4](https://doi.org/10.1007/s10670-022-00564-4).
- Siegel, S. 2010. *Contents of Visual Experience*. New York: Oxford University Press.
- Smith, A. D. 2002. *The Problem of Perception*. Cambridge, MA: Harvard University Press.
- Smith, J. 2014. "Egocentric Space." *International Journal of Philosophical Studies* 22 (3): 409–433. doi:[10.1080/09672559.2014.913888](https://doi.org/10.1080/09672559.2014.913888).
- Soteriou, M. 2011. "The Perception of Absence, Space, and Time." In *Perception, Causation, and Objectivity*, edited by J. Roessler, H. Lerman, and N. Eilan, 181–206. Oxford: Oxford University Press.
- Thompson, E. 2005. "Sensorimotor Subjectivity and the Enactive Approach to Experience." *Phenomenology and the Cognitive Sciences* 4: 407–427. doi:[10.1007/s11097-005-9003-x](https://doi.org/10.1007/s11097-005-9003-x).
- Weksler, A. 2016. "Retinal Images and Object Files: Towards Empirically Evaluating Philosophical Accounts of Visual Perspective." *Review of Philosophy and Psychology* 7: 91–103. doi:[10.1007/s13164-015-0239-2](https://doi.org/10.1007/s13164-015-0239-2).
- Wexler, M., F. Panerai, I. Lamouret, and J. Droulez. 2001. "Self-motion and the Perception of Stationary Objects." *Nature* 409: 85–88. doi:[10.1038/35051081](https://doi.org/10.1038/35051081).
- Wong, H. Y. 2015. "On the Significance of Bodily Awareness for Bodily Action." *The Philosophical Quarterly* 65 (261): 790–812. doi:[10.1093/pq/pqv007](https://doi.org/10.1093/pq/pqv007).
- Wu, W. 2011. "What is Conscious Attention?" *Philosophy and Phenomenological Research* 82 (1): 93–120. doi:[10.1111/j.1933-1592.2010.00457.x](https://doi.org/10.1111/j.1933-1592.2010.00457.x).
- Wu, W. 2014. "Against Division: Consciousness, Information and the Visual Streams." *Mind & Language* 29 (4): 383–406. doi:[10.1111/mila.12056](https://doi.org/10.1111/mila.12056).
- Zahavi, D. 1999. *Self-awareness and Alterity: A Phenomenological Investigation*. Evanston, IL: Northwestern University Press.