Our Place in Space: An Experienced Rather Than a Measured Reality

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Abstract

Research in cognitive psychology has found that healthy individuals systematically distort body image representation, overestimating the length and underestimating the volume of their body parts. This article argues that such systematic distortions are not merely methodological limitations but evidence of a deeper conceptual problem of attempting to measure a lived, experienced body as though it were an external object. Based on Merleau-Ponty's phenomenology, orientational metaphors as theorised by Lakoff and Johnson, and embodied cognition theory, this article proposes that the body is not an object occupying space but the egocentric origin of all spatial experience, and that body image is an ongoing construction shaped through sensorimotor engagement with the world rather than a fixed internal map. Body image conceptual reframing carries clinical implications, discussed through the case of body dysmorphic disorder (BDD). Finally, this article suggests that BDD treatment should shift from correcting perception against an external norm to spatial reorientation through embodied engagement.

Keywords: body image, embodied cognition, phenomenology, orientational metaphors.

Imagine there is a bottle in front of you, and you pick it up. A relatively simple task for most people, but in reality, your brain must perform precise calculations and considerations to execute the task successfully. For example, how far the bottle is, how long your arm is, and how high the bottle is positioned in relation to you. Thankfully our brains are usually quite good and fast at performing such tasks, otherwise we would be walking around knocking things over or missing them entirely. To perform actions like picking up a bottle successfully, it is important for us to have an accurate understanding of our body in space.

When we think of measuring space from an egocentric perspective, we must include insights from perception and action. Research in cognitive psychology has investigated the perception of body image in healthy adults — individuals with no known mental or physical disorders — with the results revealing unexpected findings. One would expect that healthy individuals would be able to perceive and represent their body parts accurately, but the results show that there are systematic errors of overestimating the length and underestimating the volume of body parts.

This article argues that the systematic distortions found in cognitive psychology's measurements of body image are not only methodological failures but evidence that the body is a lived, orienting space. Using Merleau-Ponty's phenomenology as a theoretical framework and orientational metaphors as further evidence, this article suggests that the main problem is not how to measure body image more accurately, but rather that measuring a subjectively experienced concept with external and objective measurements is not the correct approach to begin with. Furthermore, with the rapid rise of digital media, societal standards surrounding physical attributes such as weight, height, and BMI have gained more importance. The rise of importance of physical attributes is increasingly linked to mental health concerns including low self-esteem, depression, and eating disorders.[1] The ideas

[1] Mariana Merino et al., "Body Perceptions and Psychological Well-Being: A Review of the Impact of Social Media and Physical Measurements on Self-Esteem and Mental Health with a Focus on Body Image Satisfaction and Its Relationship with Cultural and Gender Factors," *Healthcare* 12, no. 14 (2024): 1396, https://doi.org/10.3390/healthcare12141396.

discussed in this article have further implications in understanding and developing treatment methods for disorders that include distorted embodied experiences, such as body dysmorphic disorder (BDD), shifting the perspective from perceptual correction to reorientation.

The article discusses the systematic distortion findings in body image research across five sections.[2] The first section, Body as a Measured Space, examines empirical research on body image through four studies, examining the results and evaluating the methodological limitations. The second section, Body as an Experienced Space, introduces French philosopher Merleau-Ponty's phenomenology to argue that body image is not an object that can be externally measured but the egocentric origin of all spatial experience. The third section, Understanding Space Through Language, further extends Merleau-Ponty's idea to orientational metaphors as theorised by American linguists George Lakoff and Mark Johnson, showing that abstract thought is structured through bodily experience, and that conceptual grounding is culturally shaped rather than universally fixed. The fourth section, The Body as an Active Constructor of Space, extends conceptual grounding through embodied cognition theory, using Casasanto's body-specificity hypothesis and Merleau-Ponty's discussion of inverting goggles to argue that body image is continuously constituted through sensorimotor experience rather than stored as a fixed internal map. The fifth and final section, From Perceptual Correction to Spatial Reorientation: The Case of BDD, discusses the clinical implications of body image reframing using body dysmorphic disorder as a case study, suggesting that treatment should shift its aim from perceptual correction to spatial reorientation through embodied engagement.

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[2] The theoretical frameworks used throughout this article, including phenomenology, conceptual metaphor theory, and embodied cognition, emerge from a particular intellectual tradition, as do the clinical approaches to body dysmorphic disorder discussed in the final section. The findings and suggestions are therefore limited in their cross-cultural applicability, and further research would be needed to explore how these ideas translate across different cultural contexts.

Body As a Measured Space

Navigating the world requires continuous integration of visual information and knowledge of our body's position in space, which is a process that operates through an egocentric frame of reference, largely beneath conscious awareness. Consider the bottle example from the introduction — moving your hand towards a bottle to pick it up requires knowledge of where you are in respect to the bottle. Thus, it is necessary for humans to have explicit mental representation of their body, often referred to as body image.[3] Body image describes a conscious representation through which individuals perceive the dimensions and configuration of their own body parts and is generally assumed to be highly accurate in healthy individuals.[4] However, research has revealed that healthy participants tend to overestimate their body parts in length and underestimate them in volume, raising doubts about the accuracy of the human internal representation of body image.

In a study conducted by Longo and Haggard, healthy participants demonstrated greater accuracy when visually matching their body parts to external sources than when estimating their measurements.[5] The researchers assessed perceptions of hand length and width using three approaches: depictive, metric, and implicit tasks (see fig. 1). In the depictive task, participants selected from visually manipulated images of hands to determine which appeared more slender or wider than their own. The metric task involved participants judging whether a presented line was shorter or longer than specific parts of their hand. In the implicit task, participants placed their left hand beneath a board, out of view, and used a baton to indicate the perceived locations of various anatomical landmarks on their hand. Results showed high accuracy

[3] Christina T. Fuentes, Matthew R. Longo, and Patrick Haggard, "Body Image Distortions in Healthy Adults," *Acta Psychologica* 144, no. 2 (2013): 344, https://doi.org/10.1016/j.actpsy.2013.06.012.

[4] Fuentes, Longo, and Haggard, "Body Image Distortions in Healthy Adults," 344; Renata Sadibolova et al., "Distortions of Perceived Volume and Length of Body Parts," *Cortex* 111 (2019): 75, https://doi.org/10.1016/j.cortex.2018.10.016.

[5] Matthew R. Longo and Patrick Haggard, "Implicit Body Representations and the Conscious Body Image," *Acta Psychologica* 141, no. 2 (2012): 166, https://doi.org/10.1016/j.actpsy.2012.07.015.

in the depictive condition, while the metric task revealed moderate distortion, with participants perceiving the hand as approximately equal in width and length. The greatest distortion appeared in the implicit condition, where participants estimated the hand to be about 1.5 times wider compared to its length. These findings suggest that body image representations are more precise when based on external visual references, whereas internally generated representations of actual body dimensions are substantially less accurate.

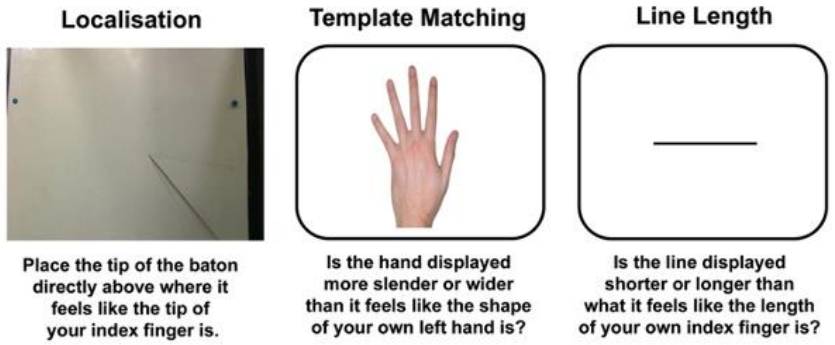

Figure 1. *Condition designs. From Matthew R. Longo and Patrick Haggard, "Implicit Body Representations and the Conscious Body Image," Acta Psychologica 141, no. 2 (October 2012): 165. Licensed under CC BY.*

Using a similar visual matching task, Fuentes, Longo and Haggard found that participants were accurate when matching their bodies to visual templates, but less precise when identifying the spatial locations of specific body parts.[6] 78 participants were tested in person and 274 participants tested online with two tasks: the Body Image Task (BIT) and a template selection task. In the BIT condition, participants clicked on a screen to indicate where they believed different body parts were located relative to the head. The template selection task included participants choosing the body template that best aligned with their own. Results from the BIT revealed systematic distortions, with participants overestimating

[6] Fuentes, Longo, and Haggard, "Body Image Distortions in Healthy Adults," 347.

shoulder width and upper arm length, while underestimating the length of their lower arms and legs (see fig. 2). In contrast, performance in the template-matching task was highly accurate. Consistent with the findings of Longo and Haggard, these results suggest that internal representations of body structure are less precise than representations supported by external visual references.[7]

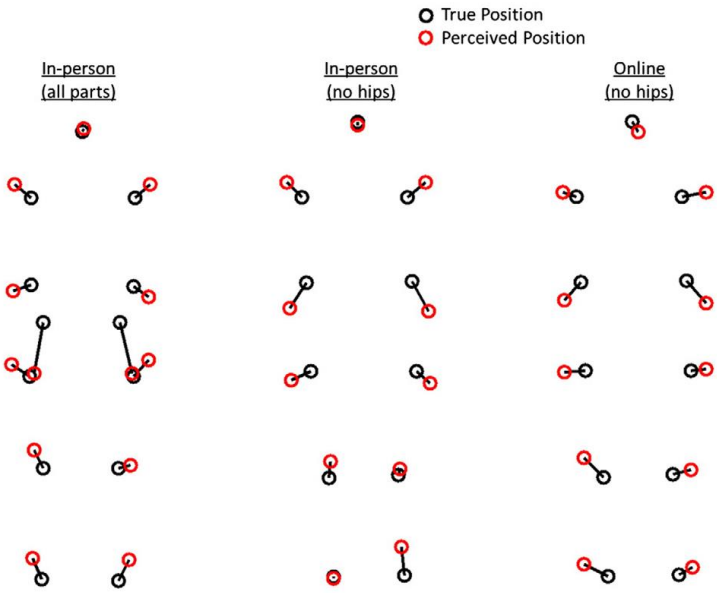

Figure 2. *Average resulting body representation figures. From Christina T. Fuentes, Matthew R. Longo, and Patrick Haggard, "Body Image Distortions in Healthy Adults," Acta Psychologica 144 (October 2013): 348. Licensed under CC BY.*

However, the understanding of our bodies comes from a combination of tactile and visual cues, therefore researching only one modality does not accurately reflect body image in the three-dimensional world that we live in.[8] In a series of experiments

[7] Longo and Haggard, "Implicit Body Representations," 167.
[8] Sally A. Linkenauger et al., "The Perceptual Homunculus: The Perception of the Relative Proportions of the Human Body," *Journal of Experimental Psychology: General* 144, no. 1 (2015): 103, https://doi.org/10.1037/xge0000028.

investigating the relationship between body sensitivity and physical size Linkenauger et al. found that participants tend to overestimate the length of less sensitive body parts, which are body parts with sparse somatosensory fields.[9] Across six experiments, participants estimated lengths of different body parts using either other body parts or external objects as a metric tool. There was a consistent pattern of participants overestimating the length of less sensitive body parts, like arms, torso, and legs, relative to more sensitive body parts, such as hands, feet, and face. Since more sensitive body areas have denser receptive fields and greater tactile acuity, such results could be considered as support for reverse distortion, suggesting that overestimating the size of less sensitive body parts compensates for the differences in tactile receptive field sizes. The findings indicate that perceptual distortions in body image may not simply reflect inaccuracy but could serve a functional purpose in maintaining a more uniform and coherent body representation.

In a study conducted by Sadibolova et al., length estimates using a hand standard led to systematic overestimation, whereas volume estimates did not follow such pattern.[10] Extending prior work on two-dimensional body perception, the researchers examined the three-dimensional experience of embodiment by assessing representations of body volume by investigating whether the ratio of a body part's surface area to its volume predicted perceived volumetric size. Participants were assigned to either a hand standard group or an object standard group. The object standard group used foamboard sticks matched to their hand length for length judgments and books of varying sizes for volume judgments. The hand standard group utilised the perceived length and volume of their right hand to estimate both dimensions.

Additionally, catch trials were used to control for the impact of measuring units. The trials included participants estimating the other group's measurement tool and confirmed that participants

[9] Somatosensory fields refer to the areas of the body represented in the brain's somatosensory cortex, which processes sensory information such as touch and pressure. More sensitive body parts, like the fingertips, have denser neural representation than less sensitive ones, like the upper arm.

[10] Sadibolova et al., "Distortions of Perceived Volume and Length of Body Parts," 79–82.

overestimated both length and volume when using hand units, suggesting that hand-based measures distort perception. Consistent with findings by Linkenauger et al., length judgments made with the hand standard were larger than those made with external objects, with the torso showing the greatest overestimation.[11] In contrast, volume judgments were not significantly influenced by the measurement tool. Moreover, body parts with a larger surface-area-to-volume ratio were associated with smaller degrees of volumetric underestimation (see fig. 3). Such findings suggest that distortions in body perception may vary across spatial dimensions, highlighting the complexity of internal body representations and pointing to the need for multidimensional models of body image and awareness.

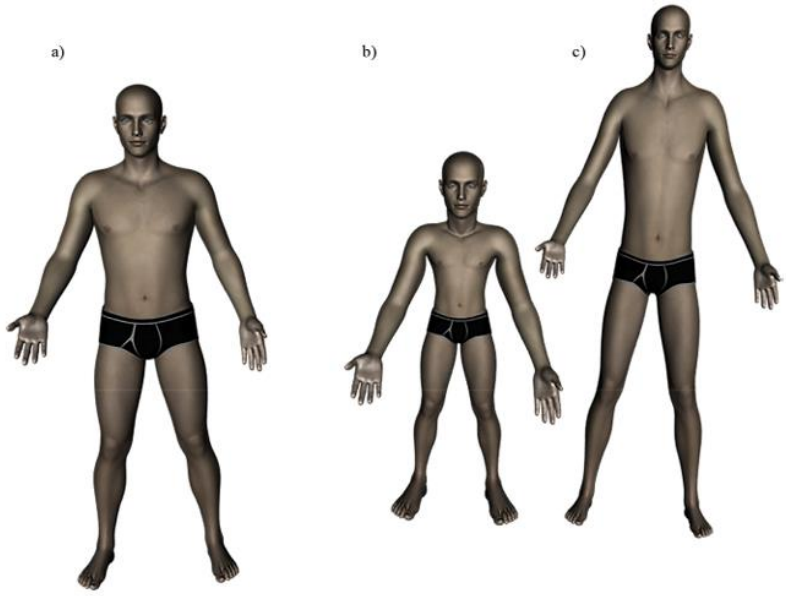

Figure 3*. Perceptual distortions of body image: a) normal body proportions, b) resemblance to somatosensory homunculus, c) body parts underestimated in volume tend to be overestimated in length. From Renata Sadibolova, Elisa R. Ferrè, Sally A. Linkenauger, and Matthew R. Longo, "Distortions of Perceived Volume and Length of Body Part," Cortex 114 (February 2019): 83. Licensed under CC BY.*

[11] Linkenauger et al., "The Perceptual Homunculus," 109–110.

Overall, our perception of body image is influenced by factors such as sensitivity and the methods used to measure body parts. Healthy participants show consistent distortions, with individuals often overestimating body part lengths and underestimating volumes, especially for less sensitive areas. However, the findings are constrained by recurring methodological and conceptual limitations. Inconsistencies in operational definitions, such as differing definitions of hand length, variation in measurement tools, and reliance on visually based estimation tasks complicate comparison and reduce generalisability.

Several experiments utilise abstract or artificial procedures, such as estimating body dimensions using one's hand or a dowel, or mentally "fitting" a hand into other body parts, which have limited resemblance to everyday embodied experience, raising concerns about ecological validity.[12] Online data collection without direct body measurements, potential misunderstandings of anatomical landmarks, the absence of controls for participants' professional background or perceptual expertise further introduce variability that may influence results.[13] Moreover, many tasks isolate visual or metric judgments, despite evidence that body representation emerges from an integration of tactile and visual cues.

Thus, while the studies offer valuable insight into systematic distortions in body perception, they also highlight the persistent difficulty of operationalising and measuring a fundamentally subjective, metaphysical, and multidimensional concept such as body image. The distortions are most striking when the body is used as its own measuring tool. If the body image is an abstract concept that can only be grasped through embodied positioning, then a question arises whether body image can be measured the same way

[12] Aitana Grasso-Cladera et al., "Mobile Brain/Body Imaging: Challenges and Opportunities for the Implementation of Research Programs Based on the 4E Perspective to Cognition," *Adaptive Behaviour* 31, no. 5 (2022): 426, https://doi.org/10.1177/10597123211072613.

[13] Lara A. Coelho et al., "Long- but Not Short-Term Tool-Use Changes Hand Representation," *Experimental Brain Research* 237 (2019): 138, https://doi.org/10.1007/s00221-018-5408-y; Gianna Cocchini et al., "The Magic Hand: Plasticity of Mental Hand Representation," *Quarterly Journal of Experimental Psychology* 71, no. 11 (2018): 2322, https://doi.org/10.1177/1747021817741606.

as that of objects. Instead of treating the body as an object, this article proposes to understand the body as the origin of the measurement itself.

Body As an Experienced Space

Consider the bottle example from the introduction again. To pick it up, one must make a calculated movement by considering how far the bottle is and how long their arm is. In doing so, the person becomes the reference point for their movement, the origin of the measurements. This is precisely what Merleau-Ponty's embodied phenomenology theorises. He argues that the body does not just exist in the world as a measurable object among other objects; rather, it actively forms the space around it through the very act of existing.[14] Merleau-Ponty proposes that the body is not in space the same way a chair is in a room; it is the condition through which space becomes meaningful. Space is not a container one is inside of, like a chair in a room, but it is something one continuously organises around themselves. Concepts like "near/far" or "reachable/unreachable" are relative to the body as the centre point.[15] Therefore, oneself is the point of departure for determining their relation to the world. The physical space around us is shaped through our experiences, senses, perceptions, movements, etc., which provide us with reference points and allow for movements like picking up a bottle. Meanwhile, psychological research continuously attempts to operationalise abstract, subjectively experienced phenomena into discrete measurable variables. An attempt that, by its nature, risks oversimplifying constructs that resist objective quantification.

To measure our body image, like the length and volume of different body parts, one must imagine themselves in an outside perspective regarding a rather subjective experience — our lived world. Psychology treats the body as an object to be measured externally, but Merleau-Ponty's framework suggests that such an approach misunderstands what the body is. The widely used metaphor PLACE YOURSELF IN ANOTHER PERSON'S

[14] Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge, 2002), 81.
[15] Merleau-Ponty, *Phenomenology of Perception*, 83.

SHOES illustrates this distinction.[16] The metaphor does not require one to place themselves in another person's position. This would simply result in a change of physical space, but the perceived world would not change. Instead, as Merleau-Ponty's phenomenology framework suggests, the metaphor requires one to temporarily inhabit someone else's spatiality of situation entirely, not merely their location within it. The body is not like other external objects that possess spatiality of position but can be thought of in terms of spatiality of situation — a bodily orientation that structures how the world is experienced.[17] Reducing one's body to measurements misses what makes the body distinct from any other object in space.

If the body truly is the embodiment of our experienced space in the world, then measuring it using external techniques misses the essence of our body image being not just a map of physical dimensions but a representation of one's lived and experienced space. Two people with different body images are inhabiting different spatial realities and distorted body image is not a calculation error, but rather differently embodied spatial experience. What is described as "distortion" may therefore be less of a perceptual error than a differently structured embodied experience. Hence, when researchers ask participants to estimate the length of a body part, they are not measuring the body as an external object. Instead, they are engaging with the body as the origin point from which spatial reference itself emergers. Thus, estimation of the length of a body part is not an objective assessment of physical dimensions, but an expression of how one's lived body organises and constitutes space.

Understanding Space Through Language

The notion that the body is not merely an object occupying space but rather the origin of spatial experience has implications regarding how we speak and think about the world. If the body is, as Merleau-Ponty argues, the origin of all spatial experience, then the way we talk about abstract things should reflect that. While Merleau-Ponty provides the basis for understanding why bodily experience

[16] Metaphors are written in uppercase following the convention established in Lakoff and Johnson (1980).
[17] Merleau-Ponty, *Phenomenology of Perception*, 114–115.

structures thought, Lakoff and Johnson provide linguistic evidence for the claim. Lakoff and Johnson suggest that our conceptual system structures how we perceive and experience the world, with the primary way of expressing our conceptual structures being metaphors.[18] Orientational metaphors are used to organise whole system of concepts in terms of another, such as up-down, in-out, on-off, central-peripheral.[19]

Lakoff and Johnson argue that metaphorical orientations are based on our physical and cultural experience. For example, a slumpy posture usually implies sadness and depression, while an upright posture is associated with a positive emotional state, thus happy is "up" and sad is "down": I'M FEELING UP, MY SPIRITS ROSE, I'M FEELING DOWN, I FELL INTO DEPRESSION. Health and life are associated with up, while sickness and death with down, since serious illness forces us to lie down physically: HE'S IN TOP SHAPE, ANNA ROSE FROM THE DEAD, HE FELL ILL, HIS HEALTH IS DECLINING. Future events are also thought of as up, as our eyes look in the direction in which we typically move, such as forward: WHAT'S COMING UP THIS WEEK, I'M SCARED OF WHAT'S AHEAD OF US IN THE COMING MONTHS.[20]

However, while oppositions like up-down are physical in nature, the orientational metaphors based on them can differ between languages. For example, in Aymara, a language spoken mainly in Bolivia and Peru, future is behind the ego, and past is in front of the ego. Past is something known, therefore it is placed in our field of vision, while the future, the unknown, is behind us.[21] Núñez and Sweester (2006) found that Aymara speakers gesture forward when talking about the past, and gesture backward when talking about the future. While the abstract concepts behind the

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[18] George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 12.
[19] Lakoff and Johnson, *Metaphors We Live By*, 22.
[20] Lakoff and Johnson, *Metaphors We Live By*, 22–24.
[21] Rafael E. Núñez and Eve Sweetser, "With the Future Behind Them: Convergent Evidence From Aymara Language and Gesture in the Crosslinguistic Comparison of Spatial Construals of Time," *Cognitive Science* 30, no. 3 (2006): 411–412, https://doi.org/10.1207/s15516709cog0000_62.

orientations may vary, the contrasting interpretations suggest that metaphors are grounded in shared bodily experience within a world, not in universal biology alone, suggesting that sharing the same physical bodily aspects, such as body parts, does not guarantee a shared understanding of our embodiment in space. The body's orientation in space becomes the scaffolding through which abstract experience is made meaningful. Orientational metaphors are not based on physical world, but rather the shared subjective perceived bodily reality with its distortions, which resonates with Merleau-Ponty's account of the body as lived space.

For Merleau-Ponty, language is not a separate system laid over experience but is itself rooted in the body's immediate engagement with the world. When we say we are "carrying" a burden, "reaching" for a goal or feeling "crushed" by expectations, we are not simply using creative figures of speech. We are referencing the body's actual experiences of weight, extension, and pressure to give form to something that would otherwise be inaccessible to language. Likewise, we can communicate a shared understanding of body image as we all have an experience of existing in a body and space, but the body image itself varies between people due to subjective experiences.

The Body as an Active Constructor of Space

The evidence from orientational metaphors suggests that bodily experience structures not just movement but abstract thought itself. Embodied cognition theory extends evidence from metaphors to a broader framework for understanding how bodily experiences influence the mind. The theory proposes two basic manifestations of embodiment: the lived and experienced structure of the body, and the body as the active materialisation and immediate environment of cognition. From a neural perspective, this can be understood as the mapping of cognitive limits within the sensorimotor system. Some theorists, like Mahon and Caramazza (2008), argue that conceptual properties operate at a higher order

than purely sensorimotor processing.[22] Others, such as Gallese and Lakoff (2005), suggest stronger embodied accounts that ground concepts entirely in sensorimotor experience.[23] In other words, according to embodied cognition theory, the body shapes our cognition through the ways we physically experience our bodies and through the ways the body restricts and enables our thinking. Therefore, cognition is partly organised around movement and sensation in the brain. The central debate between the strong and weak embodied cognition scholars concerns not whether embodiment is sufficient to ground abstract concepts, but whether it is necessary.[24] In terms of body image, a strong embodied cognition account would suggest that body image is made up of solely sensorimotor experiences, and its distortions could alter cognitive functioning. The weak account would argue that other factors like interaction between abstract concepts and sensorimotor experiences and its distortions would still allow a person with distorted body image to navigate the world and perform different cognitive functions successfully.

Casasanto's body-specificity hypothesis presents that motor experience has a role in shaping abstract concepts. Left- and right-handed people systematically associate positive valence with opposite sides of space, which is a pattern attributed to perceptual-motor fluency. Since the dominant side is more practiced and responsive, it acquires an affective quality of familiarity and proficiency that becomes mapped onto abstract judgments of goodness. However, such "sided" thinking does not imply that the two groups hold categorically different concepts of "good" and "bad". Rather, the process by which valenced judgments are constructed differs based on asymmetrical bodily experience. Thus,

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[22] Bradford Z. Mahon and Alfonso Caramazza, "A Critical Look at the Embodied Cognition Hypothesis and a New Proposal for Grounding Conceptual Content," *Journal of Physiology, Paris* 102, no. 1–3 (2008): 59–70, https://doi.org/10.1016/j.jphysparis.2008.03.004.

[23] Vittorio Gallese and George Lakoff, "The Brain's Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge," *Cognitive Neuropsychology* 22, no. 3 (2005): 455–479, https://doi.org/10.1080/02643290442000310.

[24] Tim Reinboth and Igor Farkaš, "Ultimate Grounding of Abstract Concepts: A Graded Account," *Journal of Cognition* 5, no. 1 (2022): 1–26, https://doi.org/10.5334/joc.214.

concepts are not fixed representational ideas retrieved from our cognition but are constituted dynamically through sensorimotor activation.[25]

Such functionalist view of embodied cognition is further supported by Merleau-Ponty's discussion of inverting goggles.[26] When a participant wears lenses that correct retinal images, the world is initially rendered upside. After a week of wearing the inverting goggles, taking them off results in reversed motor actions, but objects do not appear inverted. The body is simultaneously presented with two incompatible spatial maps — the inverted visual field and the intact sensorimotor representation of an upright body. The representations cannot be accommodated at once, and their conflict persists until one is gradually displaced by the other. The resolution occurs not through deliberate cognitive recalibration but through action. Participants who engage actively with their environment, such as by washing their hands, reorient themselves significantly faster than passive participants. Through repeated motor engagement, the body remaps its spatial coordinates, learning that directions previously experienced as downward now correspond to an upward visual signal, until a new coherent spatial reality is established. When the goggles are removed, the world does not appear inverted but rather unfamiliar, yet motor responses remain temporarily reversed, serving as evidence that the body had fully internalised the new spatial schema at a deeper level.

Therefore, Casasanto's body-specificity hypothesis and Merleau-Ponty's account suggest that space is not computed and then acted upon, but is continuously created though bodily movement itself, which is contrary to the initial example of reaching for a bottle and the brain calculating the movement. Based on the view of embodied cognition, body image is not a static internal metric, but an ongoing development and result of sensorimotor engagement with the world. Body image is something learned, revised, and embodied through inhabiting space, rather than represented as a fixed geometric map, and therefore cannot be

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[25] Daniel Casasanto, "Embodiment of Abstract Concepts: Good and Bad in Right- and Left-Handers," *Journal of Experimental Psychology: General* 138, no. 3 (2009): 351, https://doi.org/10.1037/a0015854.
[26] Merleau-Ponty, *Phenomenology of Perception*, 286.

measured with objective, external measurements, such as centimetres or dowels.

From Perceptual Correction to Spatial Reorientation: The Case of BDD

If even healthy individuals perceive their bodies as distorted, how would, for example, a person with body dysmorphic disorder perceive themselves? Body dysmorphic disorder (BDD) is characterised by preoccupations with one's physical appearance, causing distress and decreased social functioning. Body image and self-esteem are two very important components of an individual's self-concept, and individuals with negative body image consistently report lower self-esteem, which is often correlated with causing BDD.[27] Contrary to the above-mentioned studies where body image is assumed as a physical, measurable concept, clinical psychology settings define body image as more imaginary and conceptual, describing body image as "positive" and "negative" rather than "accurate" and "inaccurate". Instead of directly comparing the patient's perception to an objective physical standard, the positive/negative dimension engages a patient's perception of their lived experiences, including subjective appreciation and functional relationship with one's body rather than perceptual accuracy. Thus, the positive/negative dimension aligns more closely with Merleau-Ponty's phenomenological account.

However, in the case of BDD, binary oppositions like positive/negative risk having an inverse effect on the patients, as they could unintentionally propel towards self-destructive behaviours where poor body image becomes associated with a desired outcome of obtaining "correct" body image. Clinical frameworks tend to operate on a binary distinction between positive and negative body image, where positive image is associated with body and functionality appreciation, and negative body image with body

[27] Norfilita T. Lamba, "Self-Esteem, Body Image, and the Tendency of Body Dysmorphic Disorder (BDD) in Generation Z," *Observasi: Jurnal Publikasi Ilmu Psikologi* 3, no. 3 (2025): 1–2, https://doi.org/10.61132/observasi.v3i3.1259.

dissatisfaction and body shame.[28] Framing body image in terms of correctness and distortion risks pathologizing a particular way of inhabiting space, which may paradoxically manifest body image more distinctly as an identity — something that a person is rather than something that can be experienced. Body image becomes a way of inhabiting space that is recognised, named, classified and labelled, and for a person whose lived spatial reality is organised around a particular experience of their body, the negative body image becomes marked as something to be corrected. Therefore, the binary evaluation risks unintentionally reinforcing the very problem it seeks to address, as the pursuit of "correct" body image can become, from the perspective of the patient, a pursuit of desired outcome rather than a mental state to overcome.

Current treatments for BDD consist primarily of cognitive behavioural therapy (CBT) and serotonin reuptake inhibitors, with CBT techniques including cognitive restructuring, exposure and response prevention, and mirror retraining.[29] Each of these approaches operates within the same conceptual framework critiqued throughout this article, by treating distorted body image as a cognitive error to be corrected against an objective standard, and training the patient to align their perception with an externally verifiable reality. For example, mirror retraining requires the patient to use an external visual reference to revise their internal body representation, which contradicts Merleau-Ponty's school of thought – accuracy in front of a mirror does not entail a transformed lived spatial experience.

An approach incorporating Merleau-Ponty's perspective would shift the treatment aim from correction to reorientation. Rather than asking whether the patient's body image is accurate, the

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[28] Sara Iannattone, Silvia Cerea, and Gioia Bottesi, "Seeing Both Sides: Examining Profiles of Negative and Positive Body Image among Italian Adolescents Using a Person-Centered Approach," *Body Image* 54 (2025): 101943, https://doi.org/10.1016/j.bodyim.2025.101943.

[29] David Veale, "Advances in a Cognitive Behavioural Model of Body Dysmorphic Disorder," *Body Image* 1, no. 1 (2003): 113–125, https://doi.org/10.1016/S1740-1445(03)00009-3; Sabine Wilhelm et al., "Modular Cognitive-Behavioral Therapy for Body Dysmorphic Disorder: A Randomized Controlled Trial," *Behavior Therapy* 45, no. 3 (2014): 315, https://doi.org/10.1016/j.beth.2013.12.007.

approach would attend to how their body orients them in the world: what movements feel possible, what spaces feel navigable, what social situations feel inhabitable. The experiences of existing and taking up space in the world can be expanded through embodied engagement rather than perceptual correction. Like the logic of the inverting goggles experiment, spatial reorientation occurs not through deliberate cognitive recalibration but through action and movement within the world. Treatments that engage the patient's lived and actioned experience of space rather than their abstract judgments about physical dimensions may prove more effective precisely because they operate at the level where body image is actually constituted.

Conclusion

This article has argued that the systematic distortions documented in cognitive psychology's research on body image are not only reflections of methodological limitations that need to be corrected with more relevant measurement techniques, but also a reflection of the attempt to measure a lived and experienced body as if it were an external object. Merleau-Ponty's idea of the body as the origin of spatial experience rather than an object within it offers a more compelling framework, which is further supported by the structure of orientational metaphors in language and embodied cognition. Orientational metaphors reveal that abstract thought is grounded not in universal biology but in the shared, subjectively perceived bodily reality, while embodied cognition theory suggests that body image is not a fixed geometric map, but an ongoing construction shaped through sensorimotor engagement with the world. Abstract inner states, such as body image, become communicable precisely because they can be mapped onto the shared bodily experience of inhabiting space, but vary between individuals due to personal sensorimotor engagement with the world. The question of whether body image is accurate presupposes an external standard against which it can be measured, which this article has aimed to challenge. A more productive question is not how closely body image mirrors physical reality, but how well it enables a person to inhabit and navigate their world.

The reframing of body image extends to practical consequences in clinical settings. If body image is the departure point from which spatial experience is organised, then treating its distortions as errors to be corrected against an objective standard misunderstands what body image is. The inverting goggles experiment illustrates the alternative that spatial reorientation occurs not through deliberate cognitive correction but through action and movement. Therefore, when considering disorders like BDD, treatment approaches that engage patients at the level of lived, embodied spatial experience may prove more effective than those correcting perception with an external norm. Further research could implement the embodied treatment strategies and investigate their effectiveness, as well as examine how these frameworks hold across different cultural contexts, given that the theoretical and clinical traditions drawn on here emerge from a particular intellectual lineage.

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