SOFIA LIVI
Scuola Normale Superiore
sofia.livi@sns.it

BREATHING POSTURES

abstract

This paper examines the relationship between breathing, olfactory experience, and the sense of self. By employing the concept of posture, I explore the proprioceptive dimension of breathing within the complex framework of olfaction. The link between respiration and smell is analyzed phenomenologically, situating it within broader discussions on selfhood and embodiment. Ultimately, this research highlights how breathing and smelling are integral to our posture – our distinctive way of being in the world.

keywords

perception, olfaction, posture, self, phenomenology

Phenomenology and Mind, n. 29 - 2025, pp. 32-45
DOI: 10.17454/pam-2904
https://www.rosenbergesellier.it/eng/journals/phenomenology-and-mind

ISSN 2280-7853 (print) - ISSN 2239-4028 (on line)

Smell is often described as a fleeting, elusive perceptual modality, slipping away from the focus of consciousness (Sela & Sobel, 2010). Yet, as recent studies suggest, olfaction deeply contributes to our overall phenomenological experience (Smith, 2022) and to our embodied self-awareness (Young, 2023).[1] Following this perspective, I examine the entanglement between respiration, olfactory perception, and selfhood.

The guiding question of this paper aligns with what Schechtman (2007) calls the *characterization question*: what makes you the person that you are, with your peculiar personal identity? While narrativist accounts emphasize self-construction through storytelling, I argue that bodily and perceptual factors – specifically breathing and olfaction – are integral to our self-experience. To support this claim, I introduce the concept of *posture* as a lens through which to understand how our body orients itself in the world, both physically and affectively. The upshot of this research is that perception is not an anonymous matter: the perceptual experience of inhabiting the world is imbued with meaning and profoundly intertwined with the experience of the body.

The structure of the paper is as follows. Firstly, I present the problem of the self I want to explore (§1). I introduce the concept of posture (§2) and apply it in the investigation of breathing (§3). The interrelation between olfaction, the activity of breathing, and spatial exploration is then analyzed with the more general intention of facing the problem of what makes us the persons that we are (§4/6). All the various arguments converge in the last section (§7), in which breathing and the activity of smell are framed as components of our posture – that is to say, of our style of being in the world.

1. The problems of the self

The problem of the self is not a simple, monolithic question.[2] The self is a multifaceted concept analyzable from many perspectives: for instance, one might be to investigate what the self is, as an entity, or examine the conditions of persistence of selves over time. In this paper, I shall be discussing what the qualities are that define the identity of a self. In other words, the

1 "Our sense of self is partially unconsciously constructed from smelling our odourprint and smells of others [...]. [Smell] generates a partial foundation of our continual construction of our embodied and culturally embedded sense of self" (Young, 2023, p. 197).

2 For some introductions to the problems, see Di Francesco (1998), Gallagher (2000).

properties that make you *you*. And, connectedly, the elements that shape the feeling of having a particular identity.

As anticipated, this issue has been labelled as *the characterization question* and investigates "which characteristics are truly those of some person" (Schechtman, 2007, p. 73). One influential answer to the dilemma has been delivered in the solution of narrativism, according to which the characteristics of the self are narrative productions, entanglements of beliefs that subjects have of themselves.[3] Those narrations are story-like beliefs, like the plot of a novel.[4]

While I am not arguing here against the influence of narrations for the self,[5] my intention is to carve a space for other types of factors that might answer the characterization question. In doing so, I share the purpose of theorists[6] who aim at explaining psychological phenomena by appealing to less demanding processes rather than complex, full-fledged beliefs. For instance, in the case of the characterization question, this strategy has been recently advocated for by Colombetti and Bogotá (2024, p. 608): in their account, "we understand ourselves tacitly or pre-reflectively (and thus non-narratively) as embodied and situated". I will explore how the experience of our body, meshed with perceptual activity, is an element in forging the self and the phenomenological feeling of being a certain person with specific psychological orientations, history, and preferences.

2. Postures

I will develop my argument by means of the concept of posture. In its everyday use, this concept has a twofold meaning: one semantic dimension points to the musculoskeletal configuration of an organism in space; the other one is metaphorical and addresses the more general stance that a person takes towards their environment. This second connotation of the word is used to define the way in which subjects face the world: one can say, for instance, that a person holds a progressive posture in political debates, or that their posture is tight and aggressive when engaging in arguments.

This second layer of meaning might be defined as the disposition of a subject towards the world (that could have many nuances, e.g., behavioral, cognitive, and affective), a style of engaging with the environment given certain situations.[7] Asking what kind of posture is typically assumed in various circumstances – e.g., what kind of posture does a person have when immersed in a crowd of strangers – is a way of exploring how subjects develop themselves in time and space.[8]

These dispositional properties are distinct but intertwined with self-narrations, the set of characteristics that are represented (implicitly or explicitly) by the subject themselves (and by other persons too) as being the core of their self-definition. Of course, the way your style of engaging with the world is not impermeable to your self-narrations and vice versa. However, the dispositional properties that subjects have can deviate from the beliefs they have about themselves: beliefs might be open to representational error. Let us take an example. What

3 See MacIntyre (2013), Ricoeur (1992), Schechtman (2007). For a review of the various narrativist positions, Schechtman (2011).

4 According to Schechtman, narratives need not to be explicit.

5 For the limits of such an approach, see Witt (2020).

6 Typically, this is a desideratum of embodied and situated programs of research.

7 The dispositional concept of posture is close to that of *habit* and *habitus.* See Leboeuf (2020) for an introductory sketch of those two concepts (respectively, from the thought of Maurice Merleau-Ponty and Pierre Bourdieu) in the debate over implicit bias.

8 "Our activities and practices carve themselves into our bodies through repetition, shaping our bodies over time in distinctive ways and becoming habits. What we do shapes not just our muscles (e.g., by bulking them up), but also our posture (which depends on the totality of the musculoskeletal system) and, perhaps least obviously of all, the overall *style* of our actions, movements, and expressions" (Colombetti & Bogotá, 2024, p. 610).

if you depicted yourself as being an emotionally strong and mature person, while actually repressing your affective life because of your unconscious tendency to avoid emotions? In asking what characteristics should be attributed to a subject, it might be sensible to investigate their posture, conceived as an affective and intellectual style of engaging with the world, instead of relying on the beliefs that the subjects have about themselves. The self-narrations that one has can display slight distortions, incoherence, or sheer confabulations.[9]

So far, I have analyzed the two meanings of the world *posture* and argued that one semantic pole is of interest in the investigation of the characterization question. But the peculiarity of the word *posture* is that even if the two meanings can be separated, there is a strong relationship between the two. In one sense, if we define the metaphorical posture as the style of engaging with the world in certain situations, then it should also include the way in which subjects typically conduct their bodies in various contexts (their *literal* posture). In another sense, the bodily postural configuration of a subject deeply influences their affective, cognitive postures and vice versa. This ambiguity reflects the entanglement between body and experience: a subject's bodily comportment influences, and is influenced by, their perceptual and affective orientation (Merleau-Ponty, 2012).

Indeed, the way your body is configured in space seems to influence the way you affectively respond to the world: for instance, situations of stress are faced more positively (with a better attitude, self-esteem and mood) if you adopt an upright posture instead of a slumped one (Nair *et al*., 2015). Another study's result highlights how a slouched muscular posture is an obstacle in recovering from bad moods (Veenstra *et al.,* 2017). Musculoskeletal posture also seems to have an impact on evaluating retrieved memories (Michalak *et al*., 2014). This evidence might be interpreted by saying that the bodily posture influences the phenomenal experience and the style of a subjects' responses to the world: if your style of swaying around (i.e., the disposition to move your body in certain contexts) is more chest-open and straight, then in stressful situations you might be disposed to faster emotional recoveries. This idea is in line with another study that reported how posture influences, as well, the feeling of having power over situations (Carney *et al.,* 2010). In sum, the habit of moving the body in a certain fashion can shape your affective posture, for example, making you more emotionally flexible or assertive, and influence the phenomenology of your experience (e.g., for what concerns the feeling of powerfulness).

On the other hand, ideas and affective reactions influence the way in which the body is physically articulated. It has been reported how emotional episodes activate distinct patterns of movement (Dael *et al.,* 2012). If you entertain the disposition to feel in determinate ways in certain settings, you will probably be disposed to move your bodies in specific ways. Thoughts too may have a similar property, as the beliefs (also the implicit ones) over one's own identity and place in the world can influence the way people conduct their bodies. For instance, a phenomenological study by Iris Marion Young (1990) analyses how women tend to move their bodies in a more constricted way. This idea has been sustained by psychological research (de Lemus *et al.,* 2012). In parallel, the embodied life of a black person can be influenced by social encounters and the projected social expectations and beliefs, leading to the adoption of more remissive bodily postures (Yancy, 2008).

The mentioned studies support the idea that the literal and the metaphorical postures are knotted together by recursive influences. Affective, cognitive, and embodied behavioral dispositions influence each other. In the rest of the text, with the concept of *posture* I will point

9 It should be noted that this last remark is not incompatible with some narrativist positions, such as Ricoeur's (1992).

to this complex intertwining, referring to the style of the encounter with the world that also resonates in the way the body is configured in space.

In the attempt to explore a possible nuance to the characterization, I will examine the relationship between posture, breathing, and the sense of smell.

3. Breathing postures

As seen, the way the body moves in space has relevance for the overall definition of a subject's posture. But what exactly is included in the concept of bodily posture? I have suggested how it alludes to the musculoskeletal configuration of a body in space. With this word, we normally indicate the style in which our everyday bodily activity is conducted, for instance, evoking the potential manners in which limbs sway in space, or the possible curvature of the spinal cord. One can think about the style of moving shoulders, the rhythm of the gait, or maybe the tone of our gesticulating habits.

Leaving aside these facets of bodily posture, I slide to an element that is not ordinarily taken to be part of the notion of posture: the activity of breathing. Breathing is the motoric activity that necessarily underlies all other movements. Far from being just an interoceptive matter,[10] it involves our core muscles, even influencing the expansion and contraction of the pelvic floor, and therefore our proprioceptive system.[11] The *proprioceptive system* is the body's ability to sense its position, movement, and orientation in space without relying on visual input (Proske & Gandevia, 2012).[12] The most influential way to account for this kind of awareness is to appeal to spatial representations of the body – for instance, with the concepts of *body schema* (Gallagher, 2006) or *body map* (De Vignemont, 2018).

Breathing relies on the activation of the diaphragm (Fogarty *et al.,* 2018).[13] The diaphragmatic sensations are one form of proprioceptive awareness (at least in our accepted definition). This proprioceptive awareness enables volitional regulation, as the feedback on this muscle (a type of feedback that can be consciously registered) enables the regulation of breathing movements. In other words, to be aware of the tension or relaxation of the diaphragm – i.e., of its movement – enables the subject to consciously control it. The inhalation of air can be volitionally regulated, and this is because the movement of the diaphragm is proprioceptively accessible.

Even if this goes against common sense, breathing should be appreciated as part of our embodied postural configuration, as a component of the musculoskeletal disposition in space. It concerns the dynamics of our body, the rhythm of its movements, and the way it occupies space, playing a role in maintaining balance and stability (Kocjan *et al.,* 2018; Stephens *et al.,* 2017). We should notice how breathing is not a uniform process. Our respiratory activity can

10 The term interoception refers to the perception of one's homeostatic state, for instance, the perception of hunger or thirst. See Craig (2003).

11 If it is true that diaphragmatic muscles are in some sense internal, according to the definition of proprioception and interoception that I adopt here, the perception of their contraction or expansion is a proprioceptive matter. This contraction or expansion does not involve the homeostatic state of the subject, but rather the way they move their body in space. I thank Louise Richardson for raising the issue of whether the perception of the state of the internal muscles might be interoceptive.

12 "Traditionally [...] the term proprioceptor has been restricted to receptors concerned with conscious sensations, and these include the senses of limb position and movement, the sense of tension or force, the sense of effort, and the sense of balance" (Proske & Gandevia, 2012, p. 1651).

13 In this paper, for simplicity, I will use the terms breathing and sniffing as synonyms. However, differences can be appreciated between the two (Xi *et al.,* 2023). If in both cases, the diaphragm plays a central role (Benício *et al.,* 2021), accessory respiratory muscles can also play a role in sniffing activity (Katagiri *et al.,* 2003). While the diaphragm is central to sniffing, accessory muscles can compensate to some extent, especially when diaphragmatic activation is limited or controlled. What matters for my argument is that for effective and efficient sniffing, the diaphragm's involvement (but also, more in general, proprioceptive sensations) remains crucial.

undergo variations: for instance, we can breathe by inflating our chest, with a swift rhythm, or, perhaps, taking deeper diaphragmatic breaths. Similarly to how we straighten or curve our back, our respiration expresses and influences facets of our internal state (for instance, our emotional condition). Indeed, breathing is not just a matter of inhaling and expelling air: the regulation of air intake has a lot to do with the modulation of mood (Perciavalle *et al.*, 2017). This is evident, for example, in cases of anxiety and fear, where the breath seems to slip out of our control, becoming rapid and tense; or in the instance of sighing, a possible expression of emotions such as nostalgia, sadness, or relief.[14]

If the style in which we (consciously or unconsciously) position our chin is part of our bodily posture, then also the way we (consciously or unconsciously) inflate our trunk should be considered as such. For brevity, we shall label a subject's dispositional style of breathing in different contexts as their *breathing posture.*

4. Smelling and breathing

Breathing also has a fundamental role in olfaction. In the literature, sniffing has not always been considered to be a necessary requisite for perceiving smells (see the discussion in Young, 2017), as it has been observed, in laboratory conditions, that olfactory experiences can be elicited without the act of sniffing.[15]

However, breathing and sniffing constantly accompany smell experience, and it is difficult to phenomenologically distinguish the two. Interestingly, Louise Richardson (2013) has noted how the act of sniffing is an essential part of the feeling of exteroceptivity involved in the sense of smell. She writes:

> Olfactory experience is exteroceptive, I shall argue, in that it involves smells seeming to be brought in from without by sniffing. [...] The experience you have is one of air being brought *into* the nostrils, *from without*, though the air is not represented as being at any distance or direction from you. (Richardson, 2013, pp. 402-410)

In Richardson, sniffing is necessary for the exteroceptive component (the perception of something external to the subject) in the perception of smells. However, this exteroceptivity has no spatial qualifications. In other words, while odors are perceived as being external to the subject (thanks to the activity of sniffing), they are just located in a spatially indeterminate area around the nose. She describes odors as seeming to be 'simply here', in a vague spatial proximity without a definable shape or volume.[16]

Let us unpack her argument a little. Richardson's position assigns to olfaction more perceptual complexity than traditionally allowed. Throughout the history of philosophy, smell has been considered to be without any interesting perceptual value.[17] Pure sensations, odors have been said to be felt "in the nose" (Smith, 2005, p. 139) in the same way a headache can be said to be felt in the head. Connecting olfaction to breathing (and in particular to sniffing), Richardson aims at giving a more sophisticated picture of smell perception, including in this last concept the tactile sensation of air passing through our respiratory system. These

14 I thank Louise Richardson for suggesting some examples here.

15 Young discusses the results obtained by Sobel *et al.* (1998). In their experiments, olfactory experience can be elicited without active sniffing by the subject, but by blowing air in their nostrils. Young thus comments: "[S]niffing is not necessary for us to perceive smells and even when sniffing is used to gain access to the olfactory realm of stimuli the motoric component is inessential. Moreover, the somatosensory experience of airflow can be a sufficient condition of undergoing olfactory experiences – even passively" (2017, p. 105).

16 See also Batty (2010).

17 For a brief history of the philosophical positions on smells, see Keller & Young (2023, pp. 1-11).

tactile sensations, according to Richardson, are part of our experience of odors, and they are responsible for the exteroceptive sensation that something external to us is coming into contact with our sensory systems. In this way, we can perceive smells as something outside of us (differently from a headache). Richardson's solution hinges on a reflection on the individuation of the senses: how should we discriminate a tactile experience from an olfactory one?[18] She argues against a conjunctive position on perceptual experience, i.e., the idea that the overall experience of sniffing a scent is the conjunction of two independently specifiable perceptual experiences (an olfactory one plus a tactile one). She argues, instead, that sensory experiences should be considered as part of a unified perceptual system: the olfactory experience (e.g., vanillariness) and the tactile experience (e.g., the experience of the air in the nostrils) are "both abstractions from the overall experience" (e.g., the full experience of sniffing vanillariness) (Richardson, 2013, p. 415).

5. Breathing and the olfactory exploration of space

Following Richardson's remarks about the holistic nature of experience, the point could be integrated by another reflection on the complex, unitary nature of the perception of smells. According to some scientists, the sniff is part of the activity of smelling (Mainland & Sobel, 2006). As it has been argued, "[i]t is now clear that sniffing is part of the olfactory percept" (Ferdenzi et al., 2015, p. 1777); and since in sniffing and breathing not only the tactile sensations of airflow through the nose or mouth are involved, but also the proprioceptive sensation of the muscles of the abdomen expanding and contracting; therefore, the proprioceptive sensations involved in the regulation of breath should be taken into account in the phenomenological experience of encountering smells.[19]

If, as Richardson states, the tactile sensation contributes to the phenomenological exteroceptive component (i.e., the experiential feeling that I am coming into contact with something external to me), on the other side the proprioceptive sensations might contribute, instead, to the feeling that *more or less of this something external to me is explored.*

I now explain why. In the activity of breathing, more or less muscular effort can be put into the inhalation or the expulsion of air. The degree of contraction of the diaphragmatic muscle (and the respective proprioceptive sensation) is an indicator of how much force is enacted in the exploration of the environment. Breathing deeply, engaging the diaphragm in a more intense way, will elicit the proprioceptive sensation that the overall muscles of the trunk enlarge – the chest rises, the belly inflates with air. This proprioceptive sensation might be described as a feeling of bodily expansion. In parallel, this sensation of the broadening of the body is accompanied by the feeling that *more air* is explored.

Indeed, imagine yourself in an olfactory, purposeful exploration of the environment: your instinctive movements would be either to breathe more deeply, or to sniff in a faster manner (and maybe move the head to detect from which direction a smell is coming from).[20] The spatial expansion of the core part of the body could be linked with a greater sense of

18 The question of the identification of the senses often revolves around the philosophical or scientific discussion of how we distinguish and categorize different types of sensory experiences. See, for instance, Fulkerson (2014), Macpherson (2011).

19 Here, my interest is to argue in favor of the inclusion of proprioception in the analysis of olfactory experiences. However, in the holistic phenomenology of sniffing and smelling, other components might be taken into consideration: for example, chemosensory or interoceptive sensations.

20 "Perception of an odour in the environment usually initiates a sniffing episode composed of several sniffs. Each sniff appears to be of shorter duration and to have a greater inhalation velocity than a normal breath, and it is generally accepted that this behaviour enhances perception of an odour [...] [T]his behaviour may enhance odour perception by increasing the amount and rate at which odour molecules reach the olfactory receptor epithelium" (Laing, 1983, pp. 99-102).

amplitude in one's olfactory exploration of the environment. The movements we make with our diaphragm engage our bodies so that the quality of the sense of our being in and exploring space becomes different. The perception of our spatial contact with the world enlarges, as well as the interchanges with the air we breathe. On the contrary, sniffing in a constricted way (for instance, when one is anxious) can trigger, phenomenologically speaking, suffocating sensations and the feeling of not freely sampling the air around. Reduced diaphragmatic movement sustains the feeling that the space of your exploration is limited. Indeed, when one is close to a smell they find disgusting, the instinct is to diminish the strength of their breathing to limit the exposure to the volume of air around them (I will explore this last point in the next section).

In line with the phenomenological tradition, breathing is a *mode of being-in-the-world:* the lived body is the foundation of self-experience. For Husserl (1989), the body is not merely a biological entity among others in the world (*Körper*), but a *Leib*, a lived and pre-reflective medium through which the world is disclosed. In this sense, breathing can be appreciated as a posture: our breathing patterns, together with being objective physiological functions, subjectively participate in the constitution of perceptual experience and self-awareness. Husserl's notion of *kinesthetic consciousness* (Husserl, 1980) further supports this point: kinesthetic sensations – including those involved in respiration – contribute to our sense of spatiality and embodiment. Breathing, in this sense, is not an isolated bodily function but an integral part of the lived body's ongoing engagement with the world.

To sum up the findings of this section: the air we sample with our sniffing is not completely spatially unqualified (as, instead, in Richardson), but is perceived as being more or less vast in connection with the spatial sensations of the body and the movements it engages in. In these cases, the quality and the amount of space explored are indissociable from the quality of inhabiting our bodies. These arguments portray olfaction as a complex activity that also involves the breathing posture and, in parallel, the feeling of exploring space in more expansive or constricted manners.

6. Pleasant smells

I have, so far, explored the importance of sniffing and breathing for smelling. However, the direction of the analysis can also be reversed: sniffing is also subconsciously modulated by the perceived pleasantness of the smells. Various studies have reported that during the sniff, the volume of air intake is regulated according to the perceived pleasantness or unpleasantness of odours (Bensafi *et al.,* 2002, 2003; Ferdenzi *et al.,* 2015; Johnson *et al*., 2003): pleasant odorants are inhaled more deeply and strongly, while those rated as unpleasant are sniffed less vigorously.[21] This behavior is reflected in the typical expression of disgust: the disgusted face shrinks the nostrils, so that the airflow is reduced. Young (2017, p. 101) summarizes these findings: "we modulate our sniff responses in a very robust and fine-grained manner to the valence of an olfactory object. [...] the volume of air intake and strength of motoric inhalation are modulated in accordance with the pleasant or unpleasant nature of the stimulus". Accordingly, Ferdenzi *et al.* (2015, p. 2) write that "there is now psychophysiological evidence that sniffing is modulated not only by odor intensity but also by subjective pleasantness".

The pleasantness that smells have for us is then a factor in the modulation of our breathing posture and the sensation of exploring the environment. But does it mean that the same odors have the same effects on everyone? Do good odors have the power to make us breathe more deeply? The point here is complicated. Together with quality and intensity, hedonics (i.e., pleasantness) is one of the three dimensions of olfactory experience (Rouby & Bensafi, 2002;

21 For a discussion of the ecological meaning of sniffing modulation, see Ferdenzi *et al.* (2015, pp. 7-9).

Wilson & Stevenson, 2006), and is not only dependent on the chemical configuration of the stimulus (Arshamian *et al*., 2022; Khan *et al.,* 2007), but is also modulated by various elements from the sphere of the subject, among which: their homeostatic state (Cabanac, 1971), their culture (Ferdenzi *et al.,* 2013; Kapoor, 2022), their personal history (Herz *et al*., 2004). Also, the multimodal cues presented to the subject at the moment of sniffing are another factor in the determination of the hedonic value of a smell for a given subject.[22]

Since there are many factors that play a role in defining whether a stimulus would be pleasant or unpleasant for a subject, it is misleading to talk about *good odors.* Odors move us, they are attractive or repellent to us, but it is not only a matter of biology or molecular structure.[23] The affective perception of odors (the pleasant or unpleasant perception) is also influenced by cultural and biographical factors. For example, familiarity with a smell is one variability that increases the pleasantness of a smell for a subject (Ferdenzi *et al.,* 2013).

Olfaction exemplifies how perception must be framed beyond biological reductionism – rather, as the historian of the senses Constance Classen argues, perception is (also) a cultural act (Classen, 1993). Cultural norms can regulate what we consider to be repelling odors. The cultural values of social contexts contribute to the definition of what should be perceived as pleasant and offensive. This is coherent with the presence of an olfactory component in social discrimination, such as racism (Kettler, 2020): some smells become unpleasant for subjects because associated with contexts that they despise or deem disgusting. In this sense, experiences of smells seem to be influenced not only by autobiographic memories, but also by beliefs and shared ideas.

Given the importance of experience and culture, olfactory preferences should be considered (at least to a certain degree) learnt.[24] The experiences, thoughts, and beliefs you associate with odors can influence the affective sensations felt when exposed to them (Herz, 2006; Herz *et al.,* 2004). Therefore, for every subject with olfactory abilities, there will be one array of smells experienced as being pleasant or unpleasant. And given the importance of both culture and biographical memories for shaping this olfactory palette, each array of smells classifies and distinguishes the subject both as a member of a certain group and as an individual. The memories, as well as the cultural and social positioning of a subject, constitute a peculiar kaleidoscope that shapes the affective reactions in smell perception.

So, even in this context, it is useful to talk about dispositions to perceive certain smells to be pleasant or unpleasant. To make an example: since I am familiar with the odor of my room and associate it with comfort and a safe personal space, every time that I sniff it, I would be disposed to perceive pleasant sensations. If a stranger entered my room, they would not have, probably, the same disposition, hence the same positive experience. That is because their olfactory affective dispositions, shaped by different experiences and emotional associations, would be different from mine.

7. Breathing and olfactory postures

I am about to knot together all the argumentative threads. So far, I have argued that the analysis of posture can be relevant to the study of the problem of the self (as formulated by the characterization question). I have discussed the tie between literal and metaphoric meanings of posture and explored the concept of breathing posture. This has led to an appreciation of the interplay between breathing and smelling: breathing is the proprioceptive component of

22 "Except for a few notable cases [...] most smells are markedly ambiguous in their hedonic assessments by humans. Ambiguous means that the same stimulus can have a different appeal in separate settings depending on the type of encounter" (Barwich, 2020, p. 130).

23 Even those have of course a certain impact, e.g. see Arshamian *et al*. (2022).

24 For the concept of perceptual learning in olfaction, see Wilson and Stevenson (2006).

the olfactory experience that opens the phenomenological dimension of exploring more or less space. I have reported how breathing can be modulated by the perceived pleasantness of smells, and then I have moved to the problem: what is it that makes an odor pleasant or unpleasant for a subject? The answer has turned out to be complex, including biological as well as cultural and biographical factors.

From these arguments, it is possible to draw some conclusions.

Firstly, it can be argued that associations, past experiences, and the culture of a subject can shape their posture towards odors, the affective dispositions towards them. The olfactory preferences of a subject, their *olfactory posture,* concern the places, people, foods towards which they feel to belonging, and, conversely, about the things they consider to be repellent and alien to them. In this sense, olfactory posture cannot be analyzed without considering the meaning that certain smells and situations have for the individual. Being such a complex fingerprint, the way the subject is touched by odors is an affective characterization of the self: an affective postural style. The olfactory posture of a subject should be taken into account when investigating the characterization question, not only because it relates to their personal history, but also because it affects next encounters – the behavioral, affective, and embodied ways of opening to the world.

Secondly, as we have previously seen, the hedonic value that smells have for us also modulate the way in which we breathe: this points to a regulation not only of our bodily movements but, as we saw, also of our proprioceptive feelings of bodily expansion and contraction, and of our sensation of spatial (olfactive) exploration of the air around. Not only will smelling an aroma that we consider bad elicit a negative judgment in us, but it will also shape our breathing posture and our sense of exploring space. Implicitly, the encounter with odors is impactful in our sense of being immersed in atmospheres.[25] We have dispositions to like or dislike certain odors, and these dispositions can trigger in us, for instance, the sensations to be surrounded by stifling environments: this way, olfactory and embodied postures shape the phenomenology of the subject.[26] For understanding the style of engaging with the environments in various contexts, it is important to unveil how the person is affected by perceptual encounters and how their sensation of being immersed in an environment is nuanced by different tonalities.

The experience of smelling should therefore be considered a multimodal encounter with the world that involves not only our nose and brain, but also the way our body breathes, moves in space. It does not only revolve around the smelling source, but it resonates with past scented encounters, olfactory heritages, ideas, and emotions towards the objects and the situations, shaping our sense of belonging. When we smell something, our perception can be pleasant or unpleasant; it may include a tone of familiarity, of recognition, and closeness. This discloses an olfactory style, a way to be affected by odors. And this perceptual postural configuration is meshed with the embodied one: the breathing patterns, as I have illustrated previously, are susceptible to the influences of smell pleasantness for the subject. As breathing plays roles in the way the body moves in space and in the sensation of exploring olfactorily the external space (as regulated by the activities of sniffing and breathing), those elements are implicitly modified in the encounter with scents and aromas. This continuous interplay

25 See the concepts of bodily contraction and expansion in the perception of atmospheres in the philosophy of Hermann Schmitz. For an introduction: Schmitz *et al.* (2011).

26 The role of olfaction in shaping experience is expressed by Barry Smith: "Olfaction, whether conscious or not, serves to offer a constant background to our conscious lives, modulating emotions, attention, awareness, perception of our surroundings and ourselves, guiding and regulating successful food choice and consolidating episodic memory" (Smith, 2022, p. 32).

characterizes a facet of the perception: the way we perceive the world turns out not to be a neutral, disembodied matter. Rather, through olfaction, organisms are affected and interpret the world.

In sum, I argue that olfactory posture – our embodied and affective dispositional style of engaging with smells – contributes to self-characterization: olfaction, far from being a mere access to sensory properties, is a constitutive dimension of selfhood.

REFERENCES

Arshamian, A., Gerkin, R. C., Kruspe, N., Wnuk, E., Floyd, S., O'Meara, C., Rodriguez, G. G., Lundström, J. N., Mainland, J. D., & Majid, A. (2022). The perception of odor pleasantness is shared across cultures. *Current Biology*, *32*(9), 2061-2066. https://doi.org/10.1016/j.cub.2022.03.014;

Benício, K., Resqueti, V. R., Dias, F. A. L., Pennati, F., Aliverti, A., Medeiros da Fonseca, J. D., & Fregonezi, G. A. F. (2021). Effects of diaphragmatic control on multiparametric analysis of the sniff nasal inspiratory pressure test and inspiratory muscle activity in healthy subjects. *PLoS ONE*, *16*(7), e0253132. https://doi.org/10.1371/journal.pone.0253132;

Bensafi, M., Rouby, C., Farget, V., Bertrand, B., Vigouroux, M., & Holley, A. (2002). Autonomic nervous system responses to odours: The role of pleasantness and arousal. *Chemical Senses*, *27*(8), 703-709;

Bensafi, M., Rouby, C., Farget, V., Bertrand, B., Vigouroux, M., & Holley, A. (2003). Perceptual, affective, and cognitive judgments of odors: Pleasantness and handedness effects. *Brain and Cognition*, *51*(3), 270-275;

Cabanac, M. (1971). Physiological role of pleasure: A stimulus can feel pleasant or unpleasant depending upon its usefulness as determined by internal signals. *Science*, *173*(4002), 1103-1107. https://doi.org/10.1126/science.173.4002.1103;

Carney, D. R., Cuddy, A. J. C., & Yap, A. J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological Science*, *21*(10), 1363-1368. https://doi.org/10.1177/0956797610383437;

Classen, C. (1993). *Worlds of sense: Exploring the senses in history and across cultures*. New York, NY: Routledge. https://books.google.com/books?hl=it&lr=&id=mnCpEAAAQBAJ;

Colombetti, G., & Bogotá, J. D. (2024). The tacitly situated self: From narration to sedimentation and projection. *Topoi*, *43*(3), 607-615. https://doi.org/10.1007/s11245-024-10044-9;

Craig, A. D. (2003). Interoception: The sense of the physiological condition of the body. *Current Opinion in Neurobiology*, *13*(4), 500-505;

Dael, N., Mortillaro, M., & Scherer, K. R. (2012). Emotion expression in body action and posture. *Emotion*, *12*(5), 1085-1091;

de Lemus, S., Spears, R., & Moya, M. (2012). The power of a smile to move you: Complementary submissiveness in women's posture as a function of gender salience and facial expression. *Personality and Social Psychology Bulletin*, *38*(11), 1480-1494. https://doi.org/10.1177/0146167212454178;

De Vignemont, F. (2018). *Mind the body: An exploration of bodily self-awareness*. Oxford: Oxford University Press;

Di Francesco, M. (1998). *L'io e i suoi sé. Identità personale e scienza della mente*. Available at: https://research.iusspavia.it/handle/20.500.12076/1855;

Ferdenzi, C., Fournel, A., Thévenet, M., Coppin, G., & Bensafi, M. (2015). Viewing olfactory affective responses through the sniff prism: Effect of perceptual dimensions and age on olfactomotor responses to odors. *Frontiers in Psychology*, *6*, Article 1776. https://doi.org/10.3389/fpsyg.2015.01776;

Ferdenzi, C., Roberts, S. C., Schirmer, A., Delplanque, S., Cekic, S., Porcherot, C., Cayeux, I.,

Sander, D., & Grandjean, D. (2013). Variability of affective responses to odors: Culture, gender, and olfactory knowledge. *Chemical Senses*, *38*(2), 175-186;
Fogarty, M. J., Mantilla, C. B., & Sieck, G. C. (2018). Breathing: Motor control of diaphragm muscle. *Physiology*, *33*(2), 113-126. https://doi.org/10.1152/physiol.00002.2018;
Fulkerson, M. (2014). Rethinking the senses and their interactions: The case for sensory pluralism. *Frontiers in Psychology*, *5*, Article 1426. https://doi.org/10.3389/fpsyg.2014.01426;
Gallagher, S. (2000). Philosophical conceptions of the self: Implications for cognitive science. *Trends in Cognitive Sciences*, *4*(1), 14-21;
Gallagher, S. (2006). *How the body shapes the mind*. Oxford: Clarendon Press;
Herz, R. S. (2006). I know what I like: Understanding odor preferences. In J. Drobnick (Ed.), *The smell culture reader* (pp. 190-203). New York, NY: Berg;
Herz, R. S., Schankler, C., & Beland, S. (2004). Olfaction, emotion, and associative learning: Effects on motivated behavior. *Motivation and Emotion*, *28*(4), 363-383. https://doi.org/10.1007/s11031-004-2389-x;
Husserl, E. (1980). *Phenomenology and the foundations of the sciences*. The Hague, Netherlands: Nijhoff;
Husserl, E. (1989). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy*. Dordrecht, Netherlands: Springer;
Johnson, B. N., Mainland, J. D., & Sobel, N. (2003). Rapid olfactory processing implicates subcortical control of an olfactomotor system. *Journal of Neurophysiology*, *90*(2), 1084-1094. https://doi.org/10.1152/jn.00115.2003;
Kapoor, S. (2022). The smells of caste – Body, self, and politics. In N. Di Stefano & M. T. Russo (Eds.), *Olfaction: An interdisciplinary perspective from philosophy to life sciences* (Vol. 4, pp. 21-34). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-81659-3_3;
Katagiri, M., Abe, T., Yokoba, M., Dobashi, Y., Tomita, T., & Easton, P. A. (2003). Neck and abdominal muscle activity during a sniff. *Respiratory Medicine*, *97*(9), 1027-1035. https://doi.org/10.1016/s0954-6111(03)00133-1;
Keller, A., & Young, B. D. (2023). *Theoretical perspectives on smell*. New York, NY: Routledge. https://doi.org/10.4324/9781003207801;
Kettler, A. (2020). *The smell of slavery: Olfactory racism and the Atlantic world*. Cambridge: Cambridge University Press;
Khan, R. M., Luk, C.-H., Flinker, A., Aggarwal, A., Lapid, H., Haddad, R., & Sobel, N. (2007). Predicting odor pleasantness from odorant structure: Pleasantness as a reflection of the physical world. *Journal of Neuroscience*, *27*(37), 10015-10023;
Kocjan, J., Gzik-Zroska, B., Nowakowska, K., Burkacki, M., Suchoń, S., Michnik, R., Czyżewski, D., & Adamek, M. (2018). Impact of diaphragm function parameters on balance maintenance. *PLoS ONE*, *13*(12), e0208697. https://doi.org/10.1371/journal.pone.0208697;
Laing, D. G. (1983). Natural sniffing gives optimum odour perception for humans. *Perception*, *12*(2), 99-117. https://doi.org/10.1068/p120099;
Leboeuf, C. (2020). The embodied biased mind. In N. Levy & L. Johnston (Eds.), *An introduction to implicit bias* (pp. 41-56). New York, NY: Routledge;
MacIntyre, A. (2013). *After virtue*. London: A&C Black. https://books.google.com/books?hl=it&lr=&id=td_UAAAAQBAJ;
Macpherson, F. (2011). Taxonomising the senses. *Philosophical Studies*, *153*(1), 123-142. https://doi.org/10.1007/s11098-010-9643-8;
Mainland, J., & Sobel, N. (2006). The sniff is part of the olfactory percept. *Chemical Senses*, *31*(2), 181-196;
Merleau-Ponty, M. (2012). *Phenomenology of perception*. London: Routledge;

Michalak, J., Mischnat, J., & Teismann, T. (2014). Sitting posture makes a difference—Embodiment effects on depressive memory bias. *Clinical Psychology & Psychotherapy*, *21*(6), 519-524. https://doi.org/10.1002/cpp.1890;
Nair, S., Sagar, M., Sollers III, J., Consedine, N., & Broadbent, E. (2015). Do slumped and upright postures affect stress responses? A randomized trial. *Health Psychology*, *34*(6), 632-641;
Perciavalle, V., Blandini, M., Fecarotta, P., Buscemi, A., Di Corrado, D., Bertolo, L., Fichera, F., & Coco, M. (2017). The role of deep breathing on stress. *Neurological Sciences*, *38*(3), 451-458. https://doi.org/10.1007/s10072-016-2790-8;
Proske, U., & Gandevia, S. C. (2012). The proprioceptive senses: Their roles in signaling body shape, body position and movement, and muscle force. *Physiological Reviews*, *92*(4), 1651-1697. https://doi.org/10.1152/physrev.00048.2011;
Richardson, L. (2013). Sniffing and smelling. *Philosophical Studies*, *162*(2), 401-419. https://doi.org/10.1007/s11098-011-9774-6;
Ricoeur, P. (1992). *Oneself as another*. Chicago, IL: University of Chicago Press. https://books.google.com/books?hl=it&lr=&id=uCZSOYcB_CIC;
Rouby, C., & Bensafi, M. (2002). Is there a hedonic dimension to odors? In C. Rouby, B. Schaal, D. Dubois, R. Gervais, & A. Holley (Eds.), *Olfaction, taste, and cognition* (pp. 140-159). Cambridge: Cambridge University Press;
Schechtman, M. (2007). *The constitution of selves*. Ithaca, NY: Cornell University Press. https://books.google.com/books?hl=it&lr=&id=8NhXyKt7KUwC&oi=fnd&pg=PP11&dq=schechtman&ots=2yqvwGo-1L&sig=CWgMk3CH_bq2cVFl9d4HiIOZyuM;
Schechtman, M. (2011). The narrative self. In S. Gallagher (Ed.), *The Oxford handbook of the self*. Oxford: Oxford University Press. https://academic.oup.com/edited-volume/38581/chapter/334606560;
Schmitz, H., Müllan, R. O., & Slaby, J. (2011). Emotions outside the box—The new phenomenology of feeling and corporeality. *Phenomenology and the Cognitive Sciences*, *10*(2), 241-259. https://doi.org/10.1007/s11097-011-9195-1;
Sela, L., & Sobel, N. (2010). Human olfaction: A constant state of change-blindness. *Experimental Brain Research*, *205*(1), 13-29. https://doi.org/10.1007/s00221-010-2348-6;
Smith, A. D. (2005). *The problem of perception*. Delhi: Motilal Banarsidass Publishers;
Smith, B. C. (2022). The role of smell in consciousness. In B. C. Smith (Ed.), *Theoretical perspectives on smell* (pp. 13-35). Abingdon: Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003207801-3/role-smell-consciousness-barry-smith;
Sobel, N., Prabhakaran, V., Desmond, J. E., Glover, G. H., Goode, R. L., Sullivan, E. V., & Gabrieli, J. D. E. (1998). Sniffing and smelling: Separate subsystems in the human olfactory cortex. *Nature*, *392*(6673), 282-286. https://doi.org/10.1038/32654;
Stephens, R. J., Haas, M., Moore, W. L., Emmil, J. R., Sipress, J. A., & Williams, A. (2017). Effects of diaphragmatic breathing patterns on balance: A preliminary clinical trial. *Journal of Manipulative and Physiological Therapeutics*, *40*(3), 169-175. https://doi.org/10.1016/j.jmpt.2017.01.005;
Veenstra, L., Schneider, I. K., & Koole, S. L. (2017). Embodied mood regulation: The impact of body posture on mood recovery, negative thoughts, and mood-congruent recall. *Cognition and Emotion*, *31*(7), 1361-1376. https://doi.org/10.1080/02699931.2016.1225003;
Wilson, D. A., & Stevenson, R. J. (2006). *Learning to smell: Olfactory perception from neurobiology to behavior*. Baltimore, MD: Johns Hopkins University Press. https://books.google.com/books?hl=it&lr=&id=Fwb3rCJqDJAC&oi=fnd&pg=PP13&dq=learning+to+smell&ots=mxl02VKiiX&sig=1Vlci1QLH_l6i48B_j5WI6lQ928;
Witt, K. (2020). Narrative and characterization. *Erkenntnis*, *85*(1), 45-63. https://doi.org/10.1007/s10670-018-0017-5;

Xi, J., Si, X. A., & Malvè, M. (2023). Nasal anatomy and sniffing in respiration and olfaction of wild and domestic animals. *Frontiers in Veterinary Science*, *10*, Article 1172140. https://doi.org/10.3389/fvets.2023.1172140;

Yancy, G. (2008). Elevators, social spaces and racism: A philosophical analysis. *Philosophy & Social Criticism*, *34*(8), 843-876. https://doi.org/10.1177/0191453708094727;

Young, B. D. (2017). Enactivism's last breaths. In M. Curado & S. Gouveia (Eds.), *Contemporary perspectives in the philosophy of mind* (pp. 71-90). Cambridge: Cambridge Scholars Press. Retrieved from https://philarchive.org/rec/YOUELB;

Young, B. D. (2023). Unconsciously smelling self and others. In J. R. Searle & D. Papineau (Eds.), *Conscious and unconscious mentality* (pp. 185-206). Abingdon: Routledge. https://doi.org/10.4324/9781003409526-14;

Young, I. M. (1990). *Throwing like a girl and other essays in feminist philosophy and social theory*. Bloomington, IN: Indiana University Press.