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The affectively embodied perspective of the subject

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ABSTRACT

This paper treats of phenomenal consciousness and its relation to an organism's capacity to be hedonically perturbed by its environment. This paper offers an empirically informed, phenomenologically descriptive conceptual analysis of subjective character in terms of an organism's ability to feel with its body. The subjective character of phenomenal consciousness is at least partially constituted by embodied affect, that is, by our ability to *feel* what is happening on and inside our living bodies. It is in virtue of our being able to feel with our bodies that our experiences disclose the world as seeming a certain way for us. I call this the “affectively embodied perspectival view” of subjective character (AEP).

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Introduction

This paper offers an empirically informed and phenomenologically descriptive analysis of the subjective character of experience in terms of an organism's ability to feel with its body. I call this the “affectively embodied perspectival view” of subjective character (AEP). The subjective character of an organism's phenomenally conscious states is at least partially constituted by embodied affect, that is, by our ability to *feel* what is happening on and inside our living bodies.¹ It is in virtue of our being able to feel with our bodies that our experiences disclose the world as seeming a certain way for us.

Philosophers have had much to say about the sensory and emotional aspects of mental life. However, homeostatic affect – or, as I will call it, “homeodynamic affect” – has been largely neglected in philosophy of mind. Exceptions to this neglect include Thompson (2007), Ratcliffe (2008), and Colombetti (2014). My work builds on these important contributions but differs in important ways as well. For example, Colombetti's analysis of what she calls “primordial affect” is highly suggestive but bears no necessary connection to phenomenal consciousness (Colombetti, 2014, p. 2). Her

phenomenological analysis is focused on emotions and moods; there is no in-depth treatment of homeodynamic affect. When Ratcliffe discusses “existential feelings”, he does so with reference to kinesthesia, proprioception, and interoception (2008, 123–4). However, his treatment of these phenomena happens within the framework of a Heideggerian approach to phenomenology and his treatment of the related empirical literature focusses mostly on pathological cases. I jettison the reliance on Heideggerian fundamental ontology and treat of empirical literature that bears on both ordinary and pathological cases. Lastly, Thompson’s *Mind in Life* (Thompson, 2007) is a watershed piece of philosophy that has set the agenda for embodied cognitive science over the last fifteen years. Yet his main discussion of “the feeling of existence” – and the homeodynamic processes that undergird it – lasts only two pages in the eighth chapter (2007, 229–30). This paper fills this lacuna by developing a systematic argument for the centrality of homeodynamic affect for understanding phenomenal consciousness.²

I distinguish between two important aspects of phenomenal consciousness: “qualitative character” or “content” and “subjective character” or “perspective” (Kriegel, 2009).³ The qualitative character of phenomenal consciousness is that aspect of experience in virtue of which the world seems a certain way to a subject. When an apple seems red to me, it is the redness of the apple that makes up the qualitative character of my visual experience. The subjective character of phenomenal consciousness is that aspect of experience in virtue of which any qualitative character is apprehended from an embodied first-personal point of view. Regardless of what manner of content might be manifest to my awareness in a given moment, it is the fact of this content being manifest to an awareness that I am primarily concerned with. As Merker (2013) points out: “Whatever a theory of consciousness might contain or propose, it must provide an account of what it is that places us in a *first person* perspectival relation to our phenomenal experience” (1). Therefore, in this paper, I will be primarily concerned with subjective character of experience.

1 Subjectivity and the centrality of affect

To begin, I lay out some conceptual preliminaries regarding the nature of affect as well as some important data from affective neuroscience. These conceptual and empirical details will allow me to formulate a first pass at motivating AEP.

1.1 Some varieties of affect

Affect is a capacity or sensitivity in virtue of which an organism has a hedonic relation – a relation that is graded along a spectrum of pleasant, neutral, and unpleasant – to its environment. A bodily affect is any felt

occurrence within the framework of the body. I distinguish between three types of bodily affect: sensory, emotional, and homeodynamic (cf., Panksepp, 1998, 2005, 2011). Sensory aspects of experience include sights, scents, tastes, and sounds, affects that are experienced *via* exteroceptive information channels, those that map reality outside of the body, encoding the hedonic value of external stimulus. For example, the enticing aroma of freshly baked chocolate chip cookies have a pleasant sensory affect. There are also emotional affects, the feelings that accompany emotional episodes. Emotions have at least two components: appraisal and valence. An appraisal is the part of an emotion that evaluates the significance of an emotionally salient event for the subject. The valence is the feel or hedonic component that makes the emotion positive or negative in some way (Colombetti, 2005; Prinz, 2010).⁴ Finally, undergirding our sensory affective and emotional lives, there are homeodynamic affects like thirst, hunger, and pain. Thus, there are a multitude of affective factors shaping the way the stimulus appears, how the subject relates to it, and how the subject understands themselves as an embodied agent so related.

We regularly apprehend perceptual particulars according to their affective valence, and form emotional responses to the perceived meanings of these situations (Barrett & Bar, 2009; Lebrecht et al., 2012; R. Todd et al., 2012). All of this worldly interaction happens against a background of constant homeodynamic self-regulation which facilitates and conditions our experiences. These various forms of affect are constantly structuring our lives.

1.2 Homeodynamic affect

Homeodynamic affect is physically realized in mammals by an interoceptive network of nerves that converge in the lamina I of the dorsal horn in the spine and innervate the entire living body (Craig, 2002, 2003).⁵ In virtue of the pervasive distribution of the peripheral nervous system through the body in this way, we have reason to believe that homeodynamic feelings are also so distributed. Through these regulatory processes, an organism maintains an internal equilibrium in the face of a changing and often hostile environment.⁶ The term most commonly used to describe these basic life-regulation processes is “homeostasis”. “Homeostasis” is the process of self-regulation by which an organism maintains a balance of physiological factors such as temperature, pH, and nutrient levels in its internal milieu (Craig, 2003). Such self-maintenance is necessary to keep the organism primed for dealing with possible interruptions to that balance from without (Damasio & Carvalho, 2013, p. 145).⁷

Homeodynamic affects are sensations that are felt in and on the body, holistically and locally. A local bodily sensation is one occurring in a determinate location in and on the body, like the parched sensation in your throat when you are thirsty, the grumbling feeling in your stomach when you are hungry, the need for air, sexual arousal, the need to defecate and urinate, as well as general visceral and muscular feedback in the body (Denton, 2006; Denton et al., 2009, p. 501). A holistic bodily sensation is one that animates larger sections of the body in a more diffuse way. An example is the subtle cascades of arousal that animate the trunk and limbs of the body during experiences of fatigue (James, 1890/1950 Vol. I, 404). Another example is the way the body shows up in absorbed skillful activity such as running or playing the drums.

Local bodily sensations tend to be explicitly valenced, as when I feel pain in my stubbed toe or an itch on my lower back. Holistic bodily sensations tend to be more neutral in their valence, as when I am just about to fall asleep and I can feel my whole body. That being said, holistic bodily sensations can be more explicitly valenced as well. If my band and I are performing well together, then my holistic bodily feelings are hedonically pleasant while I am playing the drums. If I am nervous and the sound isn't good, then my body feels tense and uncomfortable.

In addition to these obviously valenced embodied affects, there are relatively neutral bodily sensations that are being felt constantly whether or not there is a localized and obvious sensation arising in some specific region of the body. All local homeodynamic feelings represent departures of various kinds from a more general feeling that arises when the organism is in homeodynamic equilibrium. This more general feeling has been referred to as “the feeling of being alive” (Thompson, 2007, pp. 161, 221, 229, 354), which I claim is central to the subjective character of phenomenal consciousness in humans and other animals.

2 The affectively embodied perspectival view of subjective character

I now outline my positive argument for AEP. The first premise is the following:

1. The living body is a locus of affective subjectivity.

The living body is not just a biologically complex object but a feeling subject of experience. The second premise is the following:

2. The living body *affectively* relates the subject to a meaningful world.

In being affectively embodied, we do not simply enjoy private raw feels in our body, but that we enter into complex affectively intentional relations to our meaningful world (Slaby & Stephan, 2008). We can then generate the following conditional:

3. If the living body is a locus of subjectivity (P1) that affectively relates the subject to a meaningful world (P2), then the phenomenal character of experience is at least partially constituted by embodied affect.

The antecedent entails the consequent because the combination of (P1) and (P2) assert that my body, and the intentional relation to the world that I have in virtue of being embodied, is permeated by phenomenal affect. If that is so, then the phenomenal character of my experience is at least partially constituted by embodied affect. Therefore, the conclusion that follow from these premises is the AEP view:

C. The phenomenal character of experience is at least partially constituted by embodied affect (AEP).

My main argument, and the sub-arguments I will use to motivate its three premises, all rely heavily on phenomenological description and empirical evidence. But the upshot of those arguments is also meant to function as a kind of conceptual analysis. That is, I am offering arguments about the concept of “phenomenal consciousness”, about what it means to be phenomenally conscious at all. In the next several subsections, I will offer arguments for all of the premises of the above argument.

2.1 The living body as a locus of affective subjectivity

Here I begin with empirical evidence followed by phenomenological arguments in favor of the first premise of my argument for AEP. These two approaches to an argument for (P1) are complimentary because of challenges and ambiguities inherent in their methods when taken in isolation. Farb and Logie note that, “... interoceptive signals are often diffuse and difficult to differentiate from the integrated whole that characterizes our embodied experience in the world, yet despite the ambiguity of myriad competing signals, interoception often manifests within consciousness as a subjective gestalt” (2019, 227). Therefore, utilizing empirical data and phenomenologically precise analyses of embodied affective experience can help us develop a more nuanced understanding of the recessive and ambiguous realities of phenomenal subjectivity.

2.1.1 Empirical data on affective embodiment

I begin with some empirical evidence that bears on the first premise of my argument for AEP.⁸ Our capacity to apprehend and integrate sensory information is dependent upon a whole host of affectively charged homeodynamic self-regulation processes. These include respiration (Zelano et al., 2016), heartbeat (Babo-Rebelo et al., 2016), and gastrointestinal functioning (Richter et al., 2016). Homeodynamic processes of self-regulation help to realize the psychological functions proper to phenomenal awareness by undergirding the subjective character of experience against and to which the fluctuating contents of perception are manifest and by encoding those very contents with both tacit and explicit values that make them salient to that awareness.

Recent research has shown that natural respiratory function synchronizes with electrical activity in the piriform cortex and limbic areas, including the amygdala and hippocampus (Zelano et al., 2016), areas known to be associated with perceptual salience and evaluative cognition. In this experiment, subjects were given a visual discrimination task of categorizing emotionally salient faces. When the faces were presented during the inhalation phase of nasal respiration, subjects were much faster and more accurate in discerning the faces (*ibid.*, 12,460). Further, in a subsequent memory recall task, subjects were much better at recalling previous images when those images were encoded during inhalation. These results indicate that inhaling naturally regulates our capacity to discern relevant stimuli in our environment and remember task-relevant data. The homeodynamic sensation of breathing structures how objects of perception are consciously apprehended: as we take in oxygen through breathing in, we also take in the world through perception. It is commonsensical of course that breathing rates are affected by what we do. When we are angry, our breathing becomes shorter and faster, when we are calm, breathing is longer and more relaxed. However, in the aforementioned study, it was shown that the basic homeodynamic function of breathing in and out, directly entrains areas of the brain that realize perceptual salience (*ibid.*, 12,449).

It has also been shown that the phase-amplitude of alpha waves in the anterior insula and occipito-parietal regions of the brain are entrained by gastric basal rhythms (Richter et al., 2016). The resting state of the brain is continuously modulated by feedback from the stomach *via* the vagal nerve and the spine. These modulatory signals propagate through subcortical relays and a number of important cortical sites. The latter include the insula, ventral anterior cingulate cortex, and somatosensory cortex (*ibid.*, 1). In this study, participants fixated on a black dot against a gray background. The subjects were instructed to stay still and fixate on the dot and to let their mind wander. Using magneto-encephalography (MEG), the electrical signals created by the brain were measured from the subjects' scalp. The

authors point out: “The alpha rhythm is known to exert an inhibitory influence on spike-firing rate and has a versatile impact on perception, attention, and memory” (ibid., 7). The alpha rhythms of subjects with a fixation task with no cognitive burden show that the alpha waves of the brain are continuously modulated by the gastric system. Thus, we see another example of how homeodynamic processes – in this case, gastrointestinal self-regulation – shape the neural functions that realize central cognitive processes like perception, attention, and memory.

A final study that bears on my point here concerns the way our capacity for self-processing is grounded in an entrained synchrony between heartbeats and the default network (Babo-Rebelo et al., 2016). The experimenters measured heartbeat-evoked response (HERs) using MEG in a thought sampling paradigm where subjects were instructed to rate the different ways that their spontaneous thoughts were self-related. Following William James (1890/1950) and others (Christoff et al., 2011; Mandrigin & Evan, 2015), the authors differentiate between two kinds of self-related processing: the self as “I” and the self as “Me”. The self-as-I is a pre-reflective sense of self which is grounded in the subject’s capacity to experience the world from a first-personal perspective, what I have been calling “subjective character” or “subjectivity”. The self-as-Me represents the capacity of an individual to think about themselves as a self. An example of a thought had by the self-as-I would be something like <I am feeling hungry>. By contrast, an example of a thought had by the self-as-Me would be <I wonder if they like me or if they are just pretending> (Babo-Rebelo et al., 2016, p. 7834).⁹

Subjects were asked to fixate upon a point on a screen and to let their thoughts wander until the appearance of another visual stimuli (a halo around the fixation point). At the point of interruption, subjects were asked to give a report on the nature of their thoughts at that moment. The idea here is that subjects would fall into a spontaneous and associative train of thought when given a fixation point and asked to let their thoughts wander. With the addition of the halo around the fixation point and a request for a thought-report, the experimenters hoped to get some access to the ways in which subjects thought-wander.

Subjects were asked to report on their wandering thoughts along four different axes of analysis. The first axis was whether their thoughts were self-related by being expressed through the first-person pronoun “I”. That is, were the thoughts about the subject of experience (as the “I” that is acting, feeling, or perceiving). Secondly, they were asked to report on the so-called “Me”-scale; that is, were their thoughts in the form of statements about themselves in the second-person as “me” (e.g., do my colleagues like me?). They were also asked to report on the temporal dimension of their thoughts, were they in the past, present, or future as well as the emotional intensity of their thoughts.

The authors found two different networks of brain-viscera entrainment that undergird the two kinds of self-related processes (I vs. me thoughts). In particular, subject-as-I thoughts were correlated with the ventral precuneus differentially responding to heartbeats and subject-as-Me thoughts were correlated with ventromedial prefrontal cortex also responding to heartbeats. The ventral precuneus is associated with a whole host of cognitive functions, including episodic memory retrieval, perspective taking, body ownership, self-location, spatial navigation, imagination, future planning, and the feeling of agency (ibid., 7838). In both cases of self-related processes, the recursive cognitive function that facilitated both “me” and “I” cognition was structured by processes of homeodynamic self-regulation in the circulatory system.

The self-regulating processes that physically realize our experience of homeodynamic affect entrain, shape, and modulate various neural functions that realize a host of cognitive functions including perception, memory, inference, and imagination. Without this basic feeling of being alive, our capacity to think of ourselves as a subject would be empty. This feeling organizes and orients our cognitive functions in myriad ways and provides an affective frame through which the world is manifest to us (Maiese, 2016, Ch. 1).

2.1.2 The phenomenology of being alive

Here I provide some phenomenological analysis of bodily affect to ground my interpretations of the empirical data canvassed above. To begin, press your finger down with some pressure on a flat, hard surface. Your attention will shift to the resistance offered to your finger from the surface. Instead, focus your attention on the felt pressure within the part of your finger that is making physical contact with the surface. The pressure will create a specific focus-point of feeling in that part of your finger. Now shift your attention away from the point of pressure in the finger to the other less focal and intense sensations further up in your finger that are outside the halo of contact between the tip of your finger and the surface against which you are pushing. Such feelings are usually less salient but they are almost always being tacitly felt in the attentional background of conscious experience.

If you were to follow a course back through your finger up your forearm and then down from your shoulder into your chest cavity, it would be possible for you to feel a whole host of bodily sensations that animate the entirety of your body. This is not an easy task. Some people have difficulty feeling such sensations: “In contrast to the many discriminable sensations from the body, the subjective appreciation of visceral sensation is more diffuse, less well localized, and usually below perceptive thresholds” (Craig, 2002, p. 664). With some practice, however, one can learn to experience

their body as the ever-present pre-reflective background of their perceptual perspective on the world. Your local feeling of pressure (or whatever) emerges out of this affective baseline of bodily feelings.¹⁰

Consider another example, thirst. You feel local sensations in your mouth and throat that motivate you to find something to drink. Once you start to drink there is a feeling of satiation in the mouth and throat, and perhaps even in the stomach, depending on how empty it is. A cooling cascade of diffuse sensations also animates the rest of the trunk and perhaps even your limbs. Once the feeling of thirst has cleared, there is a background feeling that remains. This is the same type of feeling you felt around the halo of pressure in your finger once you expanded your attention to experience what was going on in the rest of your hand and maybe arm, namely, a diffuse homeodynamic bodily affect with a relatively neutral hedonic valence.¹¹ It is the same type of feeling you have when your body is fully engaged in an activity like playing the drums or dancing, the holistic bodily feeling of being alive.

It is worth noting here that homeodynamic affects can contribute to the phenomenal character of an experience as qualitative character and as subjective character. When a pain arises it distresses us and this tends to draw our attention to it. One is aware *of* the pain as having a location in the body; the pain is an example of qualitative character and thus an intentional object of consciousness. However, the pain is also a change in and of *me*. When I say, “Ouch, that hurts!” in response to the arising of the local pain, I am expressing a thought to the effect that something about *me*, as the subject of the experience, has changed (Soteriou, 2013, ch. 3). As I probe the body with my attention in and around the pain, I discover other sensations that are not painful but are just as present. I realize that my entire living body is a kind of organic furnace whose constant interoceptive processing yields a churning mass of such sensations.¹² This change in me consists in a disturbance of my homeodynamic equilibrium, an episodic incursion from without that impacts and alters my holistic affectively neutral feeling of being alive. Holistic bodily feelings are not just physical events on a body that I carry with me as a mental subject; they are also a feature of my subjectivity in virtue of which I am able to intelligently perceive and navigate the world. When local disturbances arise, they are disturbances of this general feeling of equilibrium. In this sense, the holistic feelings that animate the living body and constitute the feeling of being alive are mental and contribute to the subjective character of phenomenally conscious mental states.

When our homeodynamic balance is perturbed by the environment, then more particular, episodic, and local homeodynamic affects arise. If there is a rise in the concentration of salt in the bloodstream, the organism experiences thirst. If it has been too long since the last feeding, then it feels hunger.

These specific interoceptive affects are felt as departures from the affective baseline of homeodynamic equilibrium. Part of what gives the feeling of thirst, hunger, or pain its motivating quality is the fact that it lets the organism know that things are out of balance. The organism must then have *some* sense of what that balance consists in such that departure from it is felt as significant. The feeling of being alive plays that role.

The experience of balance, a feeling of homeodynamic equilibrium, contrasts with what one feels at the onset of an imbalance in the face of some perturbation. Without this felt baseline, there would be a chasm between an unconscious informational state indicating a balance and a conscious sense of imbalance after the onset of a relevant perturbation. Once you have finished drinking your water and the thirst dissipates, does your sense of the body completely disappear? Of course not. It is just that the body is no longer giving you direct and local signals that there is a lack of balance that needs to be corrected for, so your attention re-orientes to its sensory receptors and you go back to whatever worldly engagement you were occupied with before the feeling of thirst arose.

I therefore conclude that we have good reason to believe the first premise of my argument for AEP, that the living body is a locus of affective subjectivity.

2.2 The affective relation of the embodied subject to its meaningful world

Affect is not just a private raw sensation; when we feel, we are affected by a meaningful world and we are thereby related to that world affectively (Ratcliffe, 2008; Slaby & Stephan, 2008):

2. The living body *affectively* relates the subject to a meaningful world. This basic affective relation between an organism and its environment is not an occasional modification of an otherwise non-affective stream of conscious experiences. Our experience is always affective in different ways (sensory, emotional, homeodynamic), and experience is world involving. I use the term “world involving” in the sense that experience tends to present the world as seeming a certain way to us, and even in cases where there is no determinate intentional object in an experience – like in a mood, for example, – the organism is situated with respect to their world by feeling themselves a certain way in it.¹³

In addition to episodic and obvious emotional affects like anger and fear that arise and pass in response to relevant stimuli, we live through a pervasively affective baseline of bodily feeling. Psychologists of emotion and affective neuroscientists have characterized this kind of baseline affect in terms of microvalences that orient our perceptual attention (Barrett & Bar, 2009; Lebrecht et al., 2012). This notion of “microvalence” refers to the

fact that there is an asymptotic process of homeodynamic self-regulation whose relatively neutral baseline – what I have called “the feeling of being alive” – animates the lived body with a host of feelings that motivate us to attend, think, and act in different ways in virtue of our perceiving tacit and fluctuating values in the world. These feelings need not be as explicit as a strong feeling of disgust in the presence of a noxious odor or the craving that comes with the promise of a home cooked meal to end a prolonged hunger. It is in virtue of our perceiving microvalences in our everyday commerce with useful objects that those objects come to have the use-value that they do. When I perceive a cup, I see it not as an open-faced, cylindrical solid but as a vessel for potable liquids (Chemero, 2003; Gibson, 1986). Facts about how thirsty I am at the moment I behold the cup, and whether or not the cup is full of something I might like to drink, have a marked impact on how the cup seems to me. Our perceptions recruit a host of associated memories that encode the content of those experiences with a valence that we interpret within the framework of numerous nested hierarchies of value ranging from basic pain and pleasure responses to goal achievement and personal ownership (Truong & Todd, 2016).

It has been recently shown that perceptions of reward value function as a cross-modal integrator in perception, one that primes environment-responsive behavior (Pooresmaeili et al., 2014). Subjects were primed to associate certain auditory tones with high and low monetary reward. They were then given a visual orientation discrimination task involving Gabor patches.¹⁴ In this experiment, subjects were given a fixation point and asked to keep their attention focused there. Gabor patches were then displayed briefly (for 250 ms) at a parafoveal location with variable orientations concurrently with high and low reward sounds across trials. Subjects were asked to report on the tilt of the patches. It was found that the high-reward associated tones helped subjects to increase their visual accuracy in the discrimination task even though the tones and their associated rewards were not task-relevant. Such studies indicate that we have implicit attentional sets that are organized around reward. In this experiment, the rewards were monetary. What makes a reward something that is valued by a subject is that receiving the reward makes the subject *feel good*. In this experiment, the author's did not track the valence of embodied feelings across low and high reward trials. But, the result that high reward associated sounds improved visual discrimination suggests that positively valenced information conditions exteroceptive processing. In ordinary world-involving cases, our most basic rewards are feelings of pleasure and pain. But these results show, that even in situations that are not explicitly valenced around pain and pleasure, affectively biased attentional sets are operating as a background condition that shapes our perception.

This idea of an affectively oriented attentional set can be made clearer by considering some pathological cases. In an important study of veteran soldiers with Post-Traumatic Stress Disorder (PTSD), Rebecca Todd and colleagues (R.M. Todd et al., 2015) have shown that such survivors have a radically altered salience map of their environment, one organized around their expectation of violent threats. In this experiment: “[MEG] data were collected while participants identified two targets in a rapidly presented stream of words. The first target was a number and the second target was either a combat-related or neutral word. The difference in accuracy for combat-related versus neutral words was used as a measure of attentional bias” (R.M. Todd et al., 2015, p. 821). This experiment deploys an attentional blink paradigm (AB), which utilizes that fact that subjects often miss targets within an approximately 500 milliseconds window after an initial target capture. There were three groups that were tested: (1) PTSD suffering soldiers, (2) non-PTSD suffering soldiers, and (3) nonmilitary controls. Both military groups had a decreased attentional blink when the second target was a combat-related word. There was also greater accuracy for combat versus non-combat words, but with overall accuracy decreases compared to nonmilitary controls (ibid., 824). As the authors explain: “Crucially, soldiers with PTSD also rated combat-related words as significantly more arousing relative to neutral words than soldiers without PTSD, indicating a greater subjective emotional response to the words” (ibid., 826). The significance of these findings is substantial. The contours of our salience map are conditioned by our individual development, especially previous emotionally intense experiences. These ontogenetic factors entrain our attentional sets, and create biases that condition how things seem to us. When traumatic experiences like violent combat traumatize us, the meaning of the world can change for us and this penetrates the phenomenal field of our perception and the lifeworld in which we dwell as conscious subjects. Similarly, when rewarding experiences incentivize and motivate us, how the world seems is like a space of opportunity wherein our desires can be satisfied by engaging in the relevant course of action. It is through our feeling bodies that these rewards and threats are felt and acted upon.

In another important study, it has been shown that the spontaneous fluctuation of neural response to heartbeat is predictive of accuracy in visual detection tasks (Park et al., 2014). In this experiment, participants were presented with a stimulus that was just at the threshold of visual detection. Subjects were instructed to fixate on the center of the screen and were then given a warning stimulus followed by a 0.05 second exposure to a halo around the fixation point. This was followed by a delay and then a report as to whether they had seen the halo. Successful visual discrimination can be reliably predicted by enhanced heartbeat response before stimulus onset. Such enhanced heartbeat response is differentially linked to pre-cortical

pathways that connect reliably to the ventral anterior cingulate cortex, ventromedial prefrontal cortex, and the right inferior parietal lobe (*ibid.*, 612). As the authors explain, “... heartbeat-evoked responses contribute directly to the signal used for the final perceptual decision” (*ibid.*, 617). The dynamic and differential network of the circulatory and nervous system undergirds the precision with which perceptual information is consciously experienced. Thus, our basic perceptual relation to our environment is the product not just of a skull-bound neural representation, but a whole-body responsiveness in which homeodynamic self-regulation directly shapes the way in which the brain processes sensory information to realize conscious experience.

Similar results were reported by Herman and Tsakiris (2021) in their recent study which found that, “better interoceptive abilities may be related to more efficient information accumulation and/or increased decision accuracy when information is sampled during cardiac systole” (105). In this experiment, subjects saw a 5×5 grid of grayed-out boxes which uncovered themselves one-by-one to reveal either red or blue. This process was synchronized over various trials with different parts of the cardiac cycle.¹⁵ Subjects were asked to report which color prevailed among the boxes. In the “Fixed-Win” scenario, subjects won 100 points on the basis of a correct judgment about which color prevailed among the boxes in the grid. In the “Reward-Conflict” scenario, for every box opened, 10 points were lost from a bank of 250. A correct choice would win the remaining points (106). The experimenters found that, “... higher interoceptive awareness was related to increased decision accuracy in the Reward Conflict (but not the Fixed Win) version, when the information was presented at cardiac systole compared to diastole” (108). These results suggest that with a greater conscious awareness of bodily sensation, there is a corresponding decrease in impulsivity in decision making (109) that allows us to make judgments about certainty vs. risk.

Finally, in a series of important studies on parent-infant care dynamics, it has been shown that our capacity to maintain homeodynamic equilibrium is powerfully dependent on social bonds with trusted caregivers in the early stages of human development (Fotopoulou & Tsakiris, 2017; Fotopoulou et al., 2022). These studies show that felt affect in the body not only relates us to the world, but that the world relates to us in the establishing of those interoceptive networks that help us develop our sensorimotor capacities for meaningful engagement with the world.¹⁶ Fotopoulou and Tsakiris note that, “... embodied interactions contribute directly to the building of mental models of the infant’s physiological states, given the need to maintain such states within a given dynamic range despite internal or external perturbations” (2017, 3). So, while, “... the capacity for a minimal, affective consciousness is prescribed by phylogenetic development, but nevertheless each infant’s minimal self (i.e., the particular quality of its experiential states) is

determined in ontogenetic development. The evolutionary risk of lacking caregivers is not some unconscious ‘zombie-like’ state, but rather death” (ibid 7). Similarly, Fotopoulou et al. (2022) have found that, “affective touch such as gentle stroking or tickling regulates affect by allostatic regulation of the salience and epistemic gain of particular experiences in given contexts and timescales” (80). This is because: “When a parent feeds, or holds an infant, they are not just maintaining attachment and informing the infant about her social milieu; they are also simultaneously actively modulating the infant’s physiological states, her internal milieu, and hence her affect” (82). Thus, the living feeling body is also a social body from its earliest stages of development. And a condition of our being able to interact with – and in the infant’s case, be cared for by – our social world, is that we be intentionally directed toward and embedded in it.

In this subsection, I have provided reasons for endorsing the view that the living body *affectively* relates the subject to the world (P2). It is not just that we feel private sensations within the framework of the body (P1). We do feel these things, but in feeling them our various bodily affects relate us to the world in a number of important ways (Ratcliffe, 2008; Slaby & Stephan, 2008). In being so related, our commerce with the world is affective all the way through and all the way down.

2.3 Drawing out the conclusion

I now want to pull things together and discuss the final parts of the argument I have been developing. Recall that the third premise is the following:

3. If the living body is a locus of subjectivity that affectively relates the subject to a meaningful world, then the phenomenal character of experience is at least partially-constituted by embodied affect.

The reasons for endorsing this conditional should be clear. The pervasiveness of embodied phenomenal affect means that in virtue of being the kind of embodied creature that I am, the world is manifest to me as a field of solicitations that dwell within my living body as a host of feelings that motivate and orient me to engage with the world. Being affectively related to the world by having an embodied perspective on it is part of what it means for us to have phenomenally conscious experience. The body is a vehicle for perception and that vehicle is animated with phenomenal affect. In virtue of these pervasive feelings, the world shows up for as valuable and meaningful in different ways.

Thus, I can draw the conclusion embedded in the consequent of (P3). Namely:

C. The phenomenal character of experience is at least partially constituted by embodied affect.

What it is to experience the world is for a subject of experience to be affectively perturbed by its perceptual commerce with its environment and to thereby be affectively related to that environment.

3 Objections and replies

In this section, I consider several important objections. My responses to these will provide further details on key features of the AEP view.

3.1 *Contingent influences or constitutive dependence?*

One way to object to my view is to argue that the empirical evidence I have cited in its favor does not show as much as I think it does. Specifically, it might be argued that the relevance of respiration, gastrointestinal functioning, and heartbeat to perception of an environment is merely *influential* but not constitutive.¹⁷

To this I would respond, that there is an obvious sense in which the functioning of our perceptual system is dependent on the self-regulating processes of homeodynamic interoception: “in terms of importance for organism survival, the stability and reliability of our visceral function is vital. Quite literally, if our internal organs become unreliable, the immediate result is death. It makes sense then that evolutionarily speaking, the afferents of the interoceptive hierarchy are likely to be afforded the highest expected precision of any sensorimotor channel” (Allen & Tsakiris, 2019, p. 31). Physiologically, our homeodynamic self-regulation processes are the background against which the poised functioning of perception is possible. Further: “Visceral sensations here are the dominant basis to which perceptual- and value-based computations are added . . . cognition is enslaved to embodiment, rather than the other way around. In the perceptual domain, the implication is that unexpected deviations in heart rate, gut response, or other systems may literally change the way we perceive the world and our metacognitive uncertainty about such percepts” (ibid).

This point can be further sharpened by noting the earlier distinction I made at the level of phenomenal consciousness between an experience’s subjective character and its qualitative character (Kriegel, 2009). I have been analyzing the subjective character of experience, that first-personal window of phenomenal presence to which the contents of various perceptions is manifest. Babao-Rebelo and Tallon-Baudry note, “Organs endowed with pacemaker properties, such as the heart or the stomach, function as continuous sources of signals, sending the message to the central nervous

system that a body is there – whatever the bodily state is. This information would then be used at the central level to generate an egocentric reference frame, from which first- person perspective can arise” (2019, 47). The persistence of this feedback between brain and body is the physiological and phenomenological background against which, and to which, the meaning and value of occurrent perceptual content is received, interpreted, and responded to. This difference in *timing* is important here; sensory and motor information arise in a fluctuating context in response to and as feedback on, a meaningful world. But the first-person perspective needs to be understood as the continuously present sentient perspective for whom the contents of experience are experienced subjectively (ibid 49). The homeodynamic processes I have been analyzing are constitutive of our embodied first-personal sentient perspective (De Preester, 2019, p. 294) because “homeostatic regulation specifies a unique affective perspective based on the inner feeling of one’s body” (Christoff et al., 2011, p. 107; De Preester, 2019, p. 301). Therefore, these homeodynamic processes are constitutive of phenomenal consciousness and not just an influence on it.

3.2 Homeodynamic processes are mostly unconscious

At this point, it can be objected that these homeodynamic process that entrain our perception and generate our felt sense of self are themselves unconscious. That is, much of what goes on in the background in our homeodynamic self-regulation is merely unconscious and therefore, not constitutive of phenomenal consciousness. To address this worry, I must acknowledge that my view contains within it a tacit endorsement of a view about phenomenal consciousness that I will now make explicit. Distinguish between rich and thin views of phenomenal consciousness: rich views claim that the content of phenomenal experience overflows our attentional capacities (Block, 2007; Smith, 2019). There is a steady flow of multi-modal experience, only a fraction of which we actually attend to and act on.¹⁸ By contrast, the thin view maintains that we are perpetually subject to a refrigerator light illusion whereby we come to think that there is rich experience where there is none. When we are not attending to the world, our experience of it goes dark, just as when we close the refrigerator door.

My own view tends toward a Jamesian version of the rich view (Smith 2019; 2021). According to James, “... every one of the bodily changes, whatsoever it be, is felt, acutely or obscurely, the moment it occursOur whole cubic capacity is sensibly alive; and each morsel of it contributes its pulsations of feeling, dim or sharp, pleasant, painful, or dubious, to that sense of personality that everyone of us unfailingly carries with him” (James, 1890/1950, Vol. II, 450–1).¹⁹ I suggest that we should understand the interoceptive sensations under consideration here as overflowing our

capacities for cognitive access while still being experienced pre-reflectively in the body as a tacit motivational background that circumscribes the “affective frame” (Maiese, 2016) of first-personal givenness that presents the fluctuating content of our occurrent perceptions as being *for me* (Kriegel, 2009).

This proposal handles the objection under consideration here and accords well with the phenomenology of interoception. Such bodily feelings have a “narcissistic function” (De Vignemont, 2019, pp. 268–9; Akins, 1996) in virtue of providing the organism with visceral information about what is best for it. Since the function of interoception is to maintain homeodynamic equilibrium, we must understand the sensations it yields not as being simply about the state of the body, but about the state of the body relative to the organism’s needs and priorities (De Vignemont, 2019, p. 269). These needs and priorities are *felt* by the organism as a background against and from which motivations grow and intentions form (cf., Slaby & Stephan, 2008, pp. 509–10). Therefore, in reply to the worry that homeodynamic processes are mostly unconscious, I adopt a Jamesian view about bodily sensations and maintain that such homeodynamic feelings are often not cognitively accessed, but remain phenomenally conscious, if only in a faint and ambiguous way that operates in the background of our committed attentional commerce with the environment (see, Smith, 2021).²⁰

3.3 Bodily affect and the qualitative character of experience

One might also object to the AEP view by arguing against (P1) on the grounds that bodily affect is always an instantiation of the qualitative character of experience, not of subjective character. According to this objection, the body only contributes to the phenomenal character of experience by being something that the subject is aware *of* as a content of an experience.

To address this objection we must distinguish between the body understood as an object and the body as a subject (Mandrigin & Evan, 2015; Truong & Todd, 2016): the objection to (P1) showcases a tendency to think of bodily experience exclusively in terms of the body as a physiological object that shows up in experience like any other object. Framing the issue of experiencing bodily sensation in terms of one’s being aware *of* one’s body obfuscates the extent to which one *is* one’s body.²¹ We are not only capable of being aware *of* our body as an *object* of perception. The living body also enters experience as a *subject* because we are aware *with* our body (Mandrigin & Evan, 2015). The body as a subject experiences the world by being a vehicle for perception (Colombetti, 2014).

Consider instances of expert task absorption. When playing the drums one is able to engage one's entire body in a coordinated way that is highly salient to attention but not objectified. The body, in such situations is, "... neither transparent nor an intentional object of awareness; it is the body as experienced during the skillful performance of a specific activity when one need not attend to one's body but is nevertheless very much aware of its presence and activity" (Colombetti, 2014, pp. 117–8). So, while playing the drums the entire body is fully deployed in the action and there is a high degree of foregrounded body awareness, but the object of attention is the music. The feelings in the body are not localized and specific but global and diffuse. Unlike a local bodily sensation like an itch in the knee, in such situations, one's whole body is felt in a diffuse but foregrounded way, the body is disclosed as a perspectival locus of action and feeling.

The feelings that animate the body during such experience are conspicuous though not objectified: "Conspicuous feelings ... include 'highly self-luminous' *foreground* bodily feelings, namely, bodily feelings where the body is not an intentional object of experience but is nevertheless very much at the front of awareness" (Colombetti, 2014, p. 132). Ratcliffe (2008) calls bodily feelings of this kind, "existential feelings". Bodily feelings are "existential" insofar as they provide the subject with a sense of being situated in and related to the world: "Existential feelings are both 'feelings of the body' and 'ways of finding oneself in a world'. By a 'way of finding oneself in a world', I mean a sense of the reality of self and of world, which is inextricable from a changeable *feeling* of relatedness between body and world" (Ratcliffe, 2008, p. 2). Existential bodily feelings are not directed at specific objects or situations. They provide a phenomenological background of affectively charged embodiment through which the concrete specifics of experience are structured. They are occurrent feelings in the body of which and with which we have awareness of ourselves and the world (ibid). In the context of the previous example, the coordination of one's playing the drums with other players provides a heightened context of salience whereby this more general poised orientation of the body toward the world can be seen in a clearer way. But in fact, this kind of orientation is always present in all experience; it is just usually in the background of attention.

Such feelings as I have described are constitutive of what it means to have a perceptual perspective on the world. They provide an "affective frame" whereby the specific features of the world that we are attending to are put into relief. This is because, "... an individual's affective orientation makes her prone to certain patterns of thought and behaviour rather than others, shapes the way she attends to and interprets her surroundings, and thereby allows other cognitive processes of reasoning, deliberation, and justification to get off the ground" (Maiese, 2011, p. 5; 2016, Ch. 1). Localized bodily sensations of whatever type are local perturbations emerging out of this

more general phenomenological context of embodiment. A proper appreciation of this background indicates that the subject of perceptual experience is thoroughly embodied and that the body should not be considered as being just an object of perceptual experience but also as being a subject. That is, “. . . the body-as-subject can be described as the embodied and subjective perspective of perception, in contrast to the body perceived as one object among others from within that perspective” (Mandrigin & Evan, 2015). If these considerations are correct, then this objection fails because it fails to take into account the ways in which the living body shows up in experience not just as an object but as a subject.

3.4 Attending to the feeling body

Recall that the second premise of the argument for AEP states that the living body *affectively* relates the subject to the world. It might seem that (P2) is false because bodily affect – including the body as subject – only enters experience by being attended to. If that were true, then it would not be the case that bodily affect relates a subject to their world, but that a subject is related to their bodily affect as an aspect of the world through attention.

The idea is that the homeodynamically constituted sense of subjectivity is determined or constituted by attention (Charland, 2005; Lambie & Marcel, 2002; Schwitzgebel, 2007). The objection denies that there is a pervasive form of bodily affect that helps provide experience with a subjective character thereby relating the subject affectively to a meaningful world. On the contrary, the objection claims that homeodynamic affects are experienced only when they are attended to; the pervasiveness of homeodynamic affect is an illusion generated by our habits of attention.

In support of this objection, it is worth noting that all of my earlier phenomenological analyses relied on attention to probe the body in different ways to gain access to diffuse, holistic bodily sensations. Consider another example: I am running a race and near to the finish line I develop a cramp in my side. As time wears on, the pain increases. I do my best to breathe through it but it keeps getting worse. I push myself and try my best to ignore it but the pain shows no signs of abetting. Gratefully, I cross the finish line and enjoy some well earned water. I pace about slowly and allow my pulse to normalize and I then sit down. To my dismay the pain in my side persists. I start to probe that part of my body with my awareness and really attend to it carefully, demarcating where the center of pain is and where it starts to peter out into non-painful bodily feelings. Gradually, the pain starts to fade and I am able to enjoy a post-race celebration with my friends.

According to John Lambie and Anthony Marcel (Lambie & Marcel, 2002) all of these examples of bodily affect should be accounted for in terms of the style of attention applied to them. At the onset of the pain, it was more in the periphery of my awareness, pushing itself into focus against my will due to its interruption of my goal of continuing to run at the same speed. When I sit down and pay more careful attention to the pain, things change. By attending to the pain in my side in a “. . . sufficiently analytic and detached manner, hedonic tone may be distanced, diminished and disappear” (Lambie & Marcel, 2002, pp. 243–4). Louis Charland thinks this capacity of attention to modulate affective experience can be generalized into an “indeterminacy thesis”, according to which, “. . . there is no intrinsic objective scientific fact about what the valence of a particular emotional affect or feeling is apart from its elaboration in second order awareness . . .” (Charland, 2005, p. 233).²² If the phenomenal content of any affective state is only experienced as a result of a cognitive modulation by attention, then there is no room for the pre-attentive felt affect to do its work in orienting and organizing sensory attention.

I reject the analysis of attention and second-order awareness on offer here. It conflates first-order embodied affect and second-order response.²³ Attention can alter the latter, but not the former. By taking a more detached attitude toward the pain in my side, I am able to modulate my aversive reaction to the pain. In modulating my aversive reaction, the pain does not disappear. The nature of the first order affect itself is not constituted by my attention to it. The pain itself persists for some time and then disappears as homeodynamic equilibrium is reestablished. A recent study bears out this response: Woo et al. (2015) postulate distinct brain systems undergirding nociceptive input and self-regulation. Nociception is the process responsible for interpreting and integrating afferent nerve signals that indicate pain. This process is realized by a distributed network in the brain referred to as “the neurological pain signature” (NPS). By contrast, the self-regulatory network responsible for the modulation of pain is realized by connections between the nucleus accumbens (NA), part of the basal ganglia near the hypothalamus, and the ventromedial prefrontal cortex (vmPFC).

Thirty-three subjects were given thermal stimulation on their left forearm while connected to an fMRI scanner. Different trials of ascending temperatures were given with temperatures ranging from 44.3–49.3°C. On some trials a self-regulation strategy was implemented whereby subjects would use active imagining and subvocal narratives to modulate their experience of the pain induced by the thermal stimulation. On other trials, no such self-regulation strategy was implemented (Woo et al., 2015, p. 2). It was found that the NPS was of a similar level of activation in both types of trials. However, the self-regulation network was only active during those trials where the self-regulation strategy was implemented. During

these self-regulation trials, the NPS was not affected. The NPS only responded to nociceptive input and the NA and vmPFC was non-responsive to this input. Thus, there is a primary pain input and a cognitive appraisal thereof. The latter can certainly influence the former insofar as it is able to modulate the felt intensity of pain. However, the baseline pain signals are not affected by such attentional modulation. Since pain was reported in both types of cases, we can conclude that homeodynamic affect is not constituted by attention. Therefore, the objection fails.

3.5 The pendulum of consciousness: Affect and agency in the making of subjectivity

Enactivism maintains that perception is a form of embodied action that enacts a meaningful world of relevance (Varela et al., 2001, p. 107). There are different versions of this view; my approach is friendly to some, but not to others. First I will sketch a possible worry that enactivists might have with the AEP view of subjective character. I argue that enactivists with such a worry have an impoverished view of enactivism. I then provide some reasons for thinking that my view is friendly to versions of enactivism that are to be preferred over the ones that cannot accommodate my view.

Enactivism claims that when we perceive objects we do not do so merely as passive information processors. Objects are not sensory inputs and our subsequent judgments and actions are not outputs. Instead, perception of objects and our sensorimotor capacities are dynamically integrated. In Alva Noë's words: "Perceptual experience acquires content thanks to our possession of bodily skills. *What we perceive* is determined by *what we do* (or what we know how to do); it is determined by what we are *ready* to do." (Noë, 2004, p. 1). Perception is sensorimotor know-how; it is skill based embodied action.

I have been analyzing the subjective character of experience as an essentially affective phenomenon. I have characterized the affective nature of subjective character in terms of an organism's capacity to be hedonically perturbed by its interactions with its environment. On my view, sensory bombardment is a kind of ever-present burden by which we are passively affected by the world; we are weighted down by it, to the cellular level (Cook et al., 2014). I have thus characterized the embodied subject as a kind of patient or victim, one who is constantly, passively, and affectively perturbed by their environment. The enactive view emphasizes agency in its analysis of phenomenal character. The perceptual presence of the world is the organism's achievement. The domain of meaning that organisms live within is enacted by those organisms. Affordance landscapes or niches are

constructed by the activity of organisms. To adequately explain the phenomenal character of experience, one must account for these active agential features of the embodied subject. Being passively affected and hedonically perturbed are not sufficient to explain subjective character.

Broadly speaking, I think that this criticism is exactly right. But I also think that in accepting it, my view is enriched rather than weakened. However, to take the point on board requires some nuance, as the enactive approach to perception is both controversial and polysemous (Hutto & Myin, 2013).²⁴ Alva Noë's (2004) account of enactivism focuses exclusively on how the dynamics of attention disclose objects in terms of the subject's tacit knowledge of what it would take to move to further disclose otherwise occluded profiles of the perceived object. This is a more restrictive account of enactivism because its conception of how perceptual presence is constituted focuses exclusively on the idea that perception is a form of action constituted by knowledge of sensorimotor contingencies. This knowledge is delivered to the subject by its capacities for attending to that which it perceives. It is also arguably committed to a thin view of phenomenal consciousness, which I have already argued against.

An enactive account of perception should include an analysis of the pre-reflective experience of being a bodily subject in and through affect. Noë's (2004) attention-centered version neglects an analysis of our subjectivity as a constituent of phenomenal character (Thompson, 2005, 2007). Attentional and sensorimotor agency modify an already existing subject's experience. Attention and action structure and sculpt the contours of our phenomenal field; they do not exclusively constitute it (Merleau-Ponty, 1945/2012). Our capacity to attend and agentially respond to the world depends on a subject being already affected in some way by its experience of the world (Husserl, 2001). This is because "whatever becomes noticeable must already have been affecting one and must have some kind of affective force or allure, or affective 'grabbiness', in relation to one's attention" (Thompson, 2007, p. 263). My view is friendly to a version of enactivism that makes room for the affective substructure that primes and orients the organism to be able to respond to the world with its various capacities for agency (sensorimotor, attentional, cognitive).

The world first and foremost exerts a force upon the subject in the form of sensory bombardment. This subject is hedonically perturbed by such bombardment. Subjects respond with sensorimotor and attentional agency, sculpting out niches in order to survive. Thus, we might characterize affective subjectivity as a kind of *to-me-ness* to capture the fact that experience is at its most basic something that happens *to* us. In turn, we can then characterize the agential component of subjectivity as *for-me-ness* to capture the extent to which the world is subsequently interpreted and shaped by

the organism's purposes in responding to its initial affective perturbation (Christoff et al., 2011). Our subjective lives are like a pendulum swinging back and forth between hedonic disturbance and agential response.

Conclusion

As embodied subjects who live through phenomenally conscious experiences, we inhabit a living body and populate a meaningful world that is thoroughly affective in multiple overlapping ways. All phenomenal experience is affective in some way and to some degree. In responding to some substantial objections to my view I have bolstered and expanded it to embrace important insights regarding the nature of attention and agency. At the root of the mind is a capacity to be affectively perturbed by the world and that we in turn respond with attentional and sensorimotor agency.

We feel more than we explicitly know with our capacities for cognitive access (Smith, 2019, 2021). In living through these feelings in a pre-reflective way, we are oriented toward a meaningful world that shows itself to us in the way it does because of how our attention is deployed in implicit and explicit response to the motivations that our feelings deliver to us. Those motivations are both phylogenetically ancient and ontogenetically specific. The individuality of our affective lives is born in the blending of our concrete individual experiences with our evolutionarily primed dispositions. By feeling through our bodies, we are both individuals in the world, and members of a larger community of sentient feeling that unites us with other people and many other creatures further down the phylogenetic scale. Because much of our embodied feelings are embedded so deep in the viscera of the living body, it is often more convenient to ignore what is happening inside the body and to focus on the world outside. But in spite of such attentional habits, the deepest core of our conscious lives is the one that unfolds within the framework of the living body. It is a nexus of affect that renders our commerce with the world meaningful, and that is something worth knowing well.²⁵

Notes

1. I use “constitution” as a way of saying that *what it is* to be phenomenally conscious is to be affectively perturbed by one's world. I hedge with “at least partially” in order to acknowledge that there might other processes that are also constitutive of subjective character.
2. As will be clear in what follows, this lack of engagement is changing (see, Tsakiris & De Preester, 2019 for an important set of interdisciplinary chapters in this direction). In the philosophically oriented sciences of mind, there are many excellent

contributions (see, Damasio, 2018 for a creative and sophisticated discussion). My purpose here is to bring some degree of argumentative precision and analytical clarity to the issue.

3. The term “subjective character” originally comes from Thomas Nagel (1974), but my usage follows Kriegel’s (2009), which is slightly different from Nagel’s. Nagel uses “subjective character” as a synonym for “phenomenal character”. I use “subjective character” to refer to that aspect of phenomenal character that makes it the case that the contents of experiences are manifest *for me* from an embodied first-personal perspective.
4. While arousal and valence are normally used to describe emotional affects, these properties are also present in sensory affects and especially homeodynamic affects, which directly inform the organism about its state of arousal *via* a felt valence. See Carruthers (Carruthers, 2018) for an argument that valence is a natural kind that obtains across all affective states.
5. Innervation is the process of providing nerve energy to muscle tissue.
6. I use the locution “physically realized” as a metaphysically agnostic catch-all for the relation of the physical to the mental. I assume this relation is causal in some respect. The precise semantic values of these realization terms is an important topic in its own right. However, I leave such a project to the side.
7. A note on the terms “homeostatic” and “homeodynamic” is in order. “Homeostasis” emphasizes the fact that an organism survives by aiming for a steady-state that allows it to maintain balance in the face of perturbations. This balance is what “stasis” refers to. Self-regulation is “homeodynamic” because perturbations born of self-world contact are constant. Perfect balance is asymptotic, there are always minor fluctuations in the internal milieu of the organism. Persistence is achieved when those fluctuations occur within a permissible range of excitation; organismic stability is really metastability. The organism is not aiming at a steady state but at preservation of dynamic flexibility that keeps it robust across a variety of self-world interactions. Therefore, I use “homeodynamic” to refer to this form of bodily affect. It is a more accurate description of the regulatory micro-dynamics of the organism. See, Corcoran and Hohwy (2019) for a summary of theorists who distinguish between homeostasis and allostasis in order to emphasize the anticipatory activities of an organism over and above real-time self-regulation. Damasio (Damasio, 2018, ch. 3) argues for an expanded understanding of homeostasis. I leave such debates to the side here because of space constraints.
8. Much of the recent work in cognitive science more generally, and affective neuroscience and the psychology of attention more specifically, have been dominated by the predictive processing model (PP; Clark, 2015; Hohwy, 2013). For a representative piece of recent work applying the PP framework specifically to the nature of bodily affect and subjectivity, see, Allen and Tsakiris (2019). I have serious doubts about this framework for the affective sciences. I do not have the space to justify these doubts systematically. But briefly, see, Ransom et al. (2020) who argue that PP is not an adequate model for thinking about how affects guide attention to our environment. They argue that, “Affect-biased attention is not straightforwardly explained by the PP treatment of exogenous or endogenous attention, and it provides cases where precision expectations will be low but attention nevertheless ought to be directed to an object because of potential rewards or punishments. This suggests that in order to accommodate affect, PP theory must relinquish its claim that it provides a complete explanation of brain functioning” (9). Further, De Preester (De Preester, 2019) points out that as a model of subjectivity, neural representationalism (of which PP is

a species) about bodily affect makes the mistake of treating the body as an object, thus missing the very phenomenon under investigation (the affectively embodied *subject*). Specifically, the idea that, “... the brain *topographically represents* bodily states is unfit for thinking about the coming about of subjectivity. The reason is that representation implies objectification – and thus the irreparable disappearance – of subjectivity” (293).

9. Note that this distinction is operating at the level of kinds of thoughts. Our capacity to think of ourselves in different ways is distinct from the different ways in which we experience our bodies as objects or subjects (Christoff et al., 2011; Mandrigin & Evan, 2015).
10. Unless otherwise noted, I use “affects”, “feelings”, and “sensations” interchangeably.
11. The perceptive reader will note that by helping myself to the language of attention here that I have potentially begged the question. I address this objection in §3.4.
12. I use the metaphor of the furnace intentionally. It is meant to denote the fact that the organism is constantly transforming parts of its environment into energy that it then uses to construct and maintain itself in the face of a changing milieu.
13. Taylor (2021) argues that when we understand that homeodynamic self-regulation, and its accompanying interoceptive sensations, are a core source for the phenomenal character of experience that this yields the conceptual possibility – and empirical actuality – of something he calls “solipsistic sentience”. The idea is that an organism can experience its living body without having any experiential sense of what the world outside their body is like. If this is right, then this would constitute an objection to my claim that experience is world-involving. I don’t think this view works for two reasons. First, Taylor builds into his view a problematic conviction that perception gives us information about our environments and affect gives information about the organism, and that this distinction is strict (Taylor, 2020, p. 1). He then claims that some creatures could experience their own bodies without having any exteroceptive information. He thinks this entails a lack of environmental awareness on the basis of a borrowed distinction from Burge (2010) that distinguishes between mere sensory registration and full blown perception (Taylor, 2020, p. 3). On this view, only by having full-blown perception can an organism count as experiencing its environment. I disagree with this assessment. Even a creature that only has sensory registration must maintain *some* differential *sensitivity* to its environment in order to coordinate its actions as homeodynamic information fluctuates. Such fluctuations only occur in response to perturbations from the environment. Even in the absence of full-blown distal, exteroceptive, conscious representation in perception, one’s living body must rub up against its world in a proximal way, stimulating the semi-permeable boundary of the system, giving it a sense of how to move in response to what’s “out there”.
14. Gabor patches are a construct used in vision research to analyze early vision; they are small black and white bars in various orientations. They are often used to provide subjects with a visual fixation task while probing other parts of their cognitive and emotional functions while keeping their vision focused on the patch.
15. “A single cardiac cycle consists of two main phases. In the systolic phase the heart contracts and ejects the blood to the great vessels that leave the heart, increasing the activity of arterial baroreceptors (pressure sensors) and providing information about the strength and timing of each heartbeat to the brain. In the diastole phase the heart expands while being filled and baroreceptors are quiescent” (Herman & Tsakiris, 2021, p. 104).

16. It might come off as a trivial truism that infants can't survive without the loving touch of their caregivers. But understanding this empathic relation as a constitutive feature of the living systems ability to "mentalize" its own homeodynamic self-regulation processes is a further insight worth exploring here.
17. My thanks to an anonymous referee for pressing me to be clearer about this issue.
18. The literature on this topic is expansive and I cannot treat of it fully here. For one of the main criticisms of Block's approach to phenomenal overflow, see, Cohen and Dennett (2011) For a novel argument in favor of phenomenal overflow that does not fall afoul of most of the typical criticisms, see, Smith (2019). For a reconstruction of James's view on bodily feelings and their relation to the overflow debate and to questions about the epistemic role of phenomenal consciousness, see, Smith (2021).
19. Cited by Schwitzgebel (Schwitzgebel, 2007, p. 9).
20. I will continue to develop this point in my responses to subsequent objections considered below.
21. Note, that in claiming that we *are* our bodies I am not endorsing the so-called "mind-body identity" theory of consciousness (Smart, 1959). On the view I am defending, consciousness isn't type-identical with some physical, behavioral, or functional property of the body. That is, I am not reducing phenomenal consciousness to the *merely* physical and functional properties of the body understood as an object. On my view, the body is thoroughly phenomenal; it is not just an object, but an experiential subject in virtue of its being the lived vehicle of perception and feeling.
22. See Carruthers (Carruthers, 2018) for an opposing view.
23. Cf., De Vignemont (2019) who distinguishes between the physiological, phenomenological, and introspective levels of analysis for interoceptive sensations. He would characterize this conflation as occurring between the phenomenological and introspective levels.
24. Considering its controversial status, in acknowledging my friendliness to enactivism, I do not wish to fully endorse it, as I think my view can still be adopted by those who reject enactivism.
25. I am grateful to Evan Thompson and Anand Vaidya for feedback on earlier drafts of this paper. I am also grateful to two anonymous referees who provided extremely helpful reports that vastly improved the quality of this work.

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References

- Akins, K. (1996). Of sensory systems and the “aboutness” of mental states.” in *Journal of Philosophy*, 93(7), 72–337. <https://doi.org/10.2307/2941125>
- Allen, M., & Tsakiris, M. (2019). The body as first prior: Interoceptive predictive processing the primacy of self-models. In M. Tsakiris & H. De Preester (Eds.), *The Interoceptive Mind: From Homeostasis to Awareness* (pp. 27–45). Oxford UP.
- Babo-Rebelo, et al. (2016). Neural responses to heartbeats in the default network encode the self in spontaneous thoughts. *Journal of Neuroscience*, 36(30), 7827–7840. <https://doi.org/10.1523/JNEUROSCI.0262-16.2016>
- Babo-Rebelo, M., & Tallon-Baudry, C. (2019). Interoceptive signals, brain dynamics, and subjectivity. In M. Tsakiris & H. De Preester (Eds.), *The interoceptive mind: From homeostasis to awareness* (pp. 46–62). Oxford UP.
- Barrett, L. F., & Bar, M. (2009). See it with feeling: Affective predictions during object perception. *Philosophical Transactions of the Royal Society B*, 364(1521), 1325–1334. <https://doi.org/10.1098/rstb.2008.0312>
- Block, N. (2007). Consciousness, accessibility, and the mesh between psychology and neuroscience. *Brain and Behavioral Sciences*, 30(5–6), 481–548. <https://doi.org/10.1017/S0140525X07002786>
- Burge, T. (2010). *The origins of objectivity*. Oxford UP.
- Carruthers, P. (2018). Valence and value. *Philosophy and Phenomenological Research*, 97(3), 658–680. <https://doi.org/10.1111/phpr.12395>
- Charland, L. C. (2005). Emotion experience and the indeterminacy of valence. In L. F. Barrett, P. Niedenthal, & P. Winkielman (Eds.), *Emotion and consciousness*. Guilford Press.
- Chemero, A. (2003). An outline of a theory of affordances. *Ecological Psychology*, 15(2), 181–195. https://doi.org/10.1207/S15326969ECO1502_5
- Christoff, K., Cosmelli, D., Legrand, D., & Thompson, E. (2011). Specifying the self for cognitive neuroscience. *Trends in Cognitive Science*, 15(3), 104–112. <https://doi.org/10.1016/j.tics.2011.01.001>
- Clark, A. (2015). *Surfing uncertainty: prediction, action, and the embodied mind*. Oxford UP.
- Cohen, M. A., & Dennett, D. C. (2011). Consciousness cannot be separated from function. *Trends in Cognitive Sciences*, 15(8), 358–364. <https://doi.org/10.1016/j.tics.2011.06.008>
- Colombetti, G. (2005). Appraising valence. *Journal of Consciousness Studies*, 12(8–10), 103–126. <https://www.ingentaconnect.com/contentone/imp/jcs/2005/00000012/f0030008/art00006>
- Colombetti, G. (2014). *The Feeling Body*. MIT Press.
- Cook, N. D., Carvalho, G. B., & Damasio, A. (2014). From membrane excitability to metazoan psychology. *Trends in Neurosciences*, 37(12), 698–705. <https://doi.org/10.1016/j.tins.2014.07.011>
- Corcoran, A. W., & Hohwy, J. (2019). Allostasis, interoception, and the free energy principle: Feeling our way forward. In M. Tsakiris & H. De preester (Eds.), *The interoceptive mind: From homeostasis to awareness* (pp. 272–292). Oxford UP.
- Craig, A. D. (2002). How do you feel? Interoception: The sense of the physiological condition of the body. *Nature Reviews. Neuroscience*, 3(8), 655–666. <https://doi.org/10.1038/nrn894>
- Craig, A. D. (2003). A new view of pain as a homeostatic emotion”. *Trends in Neuroscience*, 26(6), 303–307. [https://doi.org/10.1016/S0166-2236\(03\)00123-1](https://doi.org/10.1016/S0166-2236(03)00123-1)

- Damasio, A., & Carvalho, G. B. (2013). The nature of feelings: Evolutionary and neurobiological origins. *Nature Reviews. Neuroscience*, 14(2), 143–152. <https://doi.org/10.1038/nrn3403>
- Damasio, A. (2018). *The strange order of things: life, feeling, and the making of cultures*. Pantheon.
- De Preester, H. (2019). Subjectivity as a sentient perspective and the role of interoception. In M. Tsakiris & H. De Preester (Eds.), *The interoceptive mind: from homeostasis to awareness* (pp. 293–306). Oxford UP.
- De Vignemont, F. (2019). Was descartes right after all? An affective background for bodily awareness. In M. Tsakiris & H. De Preester (Eds.), *The interoceptive mind: from homeostasis to awareness* (pp. 259–271). Oxford UP.
- Denton, D. A. (2006). *The primordial emotions: the dawning of consciousness*. Oxford UP.
- Denton, D. A., McKinley, M. J., Farrell, M., & Egan, G. F. (2009). The role of primordial emotions in the evolutionary origins of consciousness. *Consciousness and Cognition*, 18(2), 500–514. <https://doi.org/10.1016/j.concog.2008.06.009>
- Farb, N., & Logie, K. (2019). Interoceptive appraisal and mental health. In M. Tsakiris & H. De Preester (Eds.), *The interoceptive mind: From homeostasis to awareness* (pp. 227–241). Oxford UP.
- Fotopoulou, A., & Tsakiris, M. (2017). Mentalizing homeostasis: The social origins of interoceptive inference. *Neuropsychanalysis*, 19(1), 3–28. <https://doi.org/10.1080/15294145.2017.1294031>
- Fotopoulou, A., von Mohr, M., & Krahe, C. (2022). Affective regulation through touch: Homeostatic and allostatic mechanisms. *Current Opinion in Behavioral Sciences*, 43, 80–87. <https://doi.org/10.1016/j.cobeha.2021.08.008>
- Gibson, J. (1986). *The ecological approach to visual perception*. Psychology Press.
- Herman, A. M., & Tsakiris, M. (2021). The impact of cardiac afferent signaling and interoceptive abilities on passive information sampling. *International Journal of Psychophysiology*, 162, 104–111. <https://doi.org/10.1016/j.ijpsycho.2021.02.010>
- Hohwy, J. (2013). *The predictive mind*. Oxford UP.
- Husserl, E. (2001). *Analyses concerning passive and active synthesis trans.* (A. Steinbock, eds.). Kluwer.
- Hutto, D., & Myin, E. (2013). *Radicalizing enactivism: basic minds without content*. MIT Press.
- James, W. (1890/1950). *The principles of psychology* (Vol. 2). Dover.
- Kriegel, U. (2009). *Subjective consciousness: a self-representational theory*. Oxford UP.
- Lambie, J., & Marcel, A. (2002). Consciousness and the varieties of emotion experience: a theoretical framework. *Psychological Review*, 109(2), 219–259. <https://doi.org/10.1037/0033-295X.109.2.219>
- Lebrecht, S., Bar, M., Feldman Barrett, L., & Tarr, M. J. (2012). Micro-valences: Perceiving affective valence in everyday objects. *Frontiers in Psychology*, 3, 1–5. <https://doi.org/10.3389/fpsyg.2012.00107>. Article 107.
- Maiese, M. (2011). *Embodiment, Emotion and Cognition*. Palgrave.
- Maiese, M. (2016). *Embodied selves and divided minds*. Oxford UP.
- Mandrigin, A., & Evan, T. (2015). Own-body perception. In M. Matthen (Ed.), *Oxford handbook for the philosophy of perception* (pp. 515–529). Oxford UP.
- Merker, B. (2013). The efference cascade, consciousness, and its self: Naturalizing the first person pivot of action control. *Frontiers in Psychology*, 4(501), 1–20. <https://doi.org/10.3389/fpsyg.2013.00501>
- Merleau-Ponty, M. (1945/2012). *The phenomenology of perception*. D. Landes. Routledge.

- Nagel, T. (1974). What is it like to be a bat? *The Philosophical Review*, 83(4), 50–435. <https://doi.org/10.2307/2183914>
- Noë, A. (2004). *Action in Perception*. MIT Press.
- Panksepp, J. (1998). The periconscious substrates of consciousness: affective states and the evolutionary origin of the self. *Journal of Consciousness Studies*, 5(5–6), 566–582. <https://www.ingentaconnect.com/content/imp/jcs/1998/00000005/F0020005/895>
- Panksepp, J. (2005). Affective consciousness: Core emotional feelings in animals and humans. *Consciousness and Cognition*, 14(1), 30–80. <https://doi.org/10.1016/j.concog.2004.10.004>
- Panksepp, J. (2011). The basic emotional circuits of mammalian brains: Do animals have affective lives? *Neuroscience and Biobehavioral Reviews*, 35(9), 1791–1804. <https://doi.org/10.1016/j.neubiorev.2011.08.003>
- Park, H. D., Correia, S., Ducorps, A., & Tallon-Baudry, C. (2014). Spontaneous fluctuations in neural responses to heartbeats predict visual detection. *Nature Neuroscience*, 17(4), 612–618. <https://doi.org/10.1038/nn.3671>
- Pooresmaeili, A., FitzGerald, T. H. B., Bach, D. R., Toelch, U., Ostendorf, F., & Dolan, R. J. (2014). Cross-modal effects of value on perceptual acuity and stimulus encoding. *PNAS*, 111(42), 15244–15249. <https://doi.org/10.1073/pnas.1408873111>
- Prinz, J. (2010). For Valence. *Emotion Review*, 2(1), 5–13. <https://doi.org/10.1177/1754073909345546>
- Ransom, M., Fazelpour, S. M., J, Kryklywy, J., Thompson, E. T., & Todd, R. M. (2020). Affect-biased attention and predictive processing. *Cognition*, 203, 1–11. <https://doi.org/10.1016/j.cognition.2020.104370>
- Ratcliffe, M. (2008). *Feelings of being: Phenomenology, psychiatry and the sense of reality*. Oxford UP.
- Richter, C. G., Babo-Rebello, M., Schwartz, D., and Tallon-Baudry, C. (2016). Phase-amplitude coupling at the organism level: the amplitude of spontaneous alpha rhythm fluctuations varies with the phase of the infra-slow gastric basal rhythm. *NeuroImage*, 146, 951–958. <http://dx.doi.org/10.1016/j.neuroimage.2016.08.043i>
- Schwitzgebel, E. (2007). Do you have constant tactile experience of your feet in your shoes? or is experience limited to what's in attention? *Journal of Consciousness Studies*, 14(3), 5–35. <https://www.ingentaconnect.com/contentone/imp/jcs/2007/00000014/00000003/art00001>
- Slaby, J. S. & Stephan A. (2008). Affective intentionality and self-consciousness” in *Consciousness and Cognition*, 17(2), 506–513. <https://doi.org/10.1016/j.concog.2008.03.007>
- Smart, J. C. C. (1959). Sensations and brain processes. *The Philosophical Review*, 68(2), 141–156. <https://doi.org/10.2307/2182164>
- Smith, S. M. (2019). Phenomenal overflow, bodily affect, and some varieties of access. *Review of Philosophy and Psychology*, 10(4), 787–808. <https://doi.org/10.1007/s13164-019-00436-x>
- Smith, S. M. (2021). The epistemic role of consciousness from a practical point of view. *Contemporary Pragmatism*, 18(3), 242–262. <https://doi.org/10.1163/18758185-18030003>
- Soteriou, M. (2013). *The mind's construction: the ontology of mind and mental action*. Oxford UP.
- Taylor, J. C. V. (2020). Solipsistic sentience. *Mind & Language*, 1–17. <https://doi.org/10.1111/mila.12341>
- Thompson, E. (2005). Sensorimotor subjectivity and the enactive approach to experience. *Phenomenology and the Cognitive Sciences*, 4(4), 407–427. <https://doi.org/10.1007/s11097-005-9003-x>

- Thompson, E. (2007). *Mind and life: biology, phenomenology and the sciences of mind*. Harvard UP.
- Todd, R., Cunningham, W. A., Anderson, A. K., & Thompson, E. (2012). Affect-biased attention as emotion regulation. *Trends in Cognitive Sciences*, 16(7), 365–372. <https://doi.org/10.1016/j.tics.2012.06.003>
- Todd, R. M., MacDonald, M. J., Sedge, P., Robertson, A., Jetly, R., Taylor, M. J., & Pang, E. W. (2015). Soldiers with posttraumatic stress disorder see a world full of threat: Magnetoencephalography reveals enhanced tuning to combat-related cues. *Society of Biological Psychiatry*, 78(12), 821–829. <https://doi.org/10.1016/j.biopsych.2015.05.011>
- Truong, G., & Todd, R. M. (2016). SOAP opera: Self as object and agent in prioritizing attention. *Journal of Cognitive Neuroscience*, 29(6), 937–952. https://doi.org/10.1162/jocn_a_01083
- Tsakiris, M., & De Preester, H. Eds. (2019). *The interoceptive mind: from homeostasis to awareness*. Oxford UP.
- Varela, F., Thompson, E., & Rosch, E. (2001). *The embodied mind: cognitive science and human experience*. MIT Press.
- Woo, C. W., Roy, M., Buhle, J. T., & Wager, T. D. (2015). Distinct brain systems mediate the effects of nociceptive input and self-regulation on pain. *PLoS Biology*, 13(1), e1002036. <https://doi.org/10.1371/journal.pbio.1002036>
- Zelano, C., Jiang, H., Zhou, G., Arora, N., Schuele, S., Rosenow, J., & Gottfried, J. A. (2016). Nasal respiration entrains human limbic oscillations and modulates cognitive function. *Journal. Neuroscience*, 6(49), 12448–12467. <https://doi.org/10.1523/JNEUROSCI.2586-16.2016>