Theory & Psychology

Article

Forms of vitality revisited: The construction of an affective bodily self

Theory & Psychology
2019, Vol. 29(1) 27–45

DOI: 10.1177/0959354318822175
journals.sagepub.com/home/tap
SAGE

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Abstract

This article outlines a socio-constructivist view of the ontogeny of an early form of psychological self-consciousness: an affective bodily self-consciousness. In so doing, it aims at contributing to a larger anti-Cartesian agenda, which rejects the claim of the primary nature of the knowledge of one's own mental states. This will be pursued by seeking a synthesis of what may at first appear as a motley assortment of materials: the social biofeedback theory of parental affect-mirroring proposed by György Gergely and John S. Watson, Daniel Stern's notion of forms of vitality, and Antonio Damasio's concept of background feelings.

Keywords

background feelings, basic emotions, core affect, social biofeedback, vitality forms

This article outlines a socio-constructivist account of the development of an affective bodily self-consciousness viewed as the earliest form of a *psychological* self. This will involve pursuing a synthesis of what may at first appear as a rather disparate collection of ingredients: the social biofeedback theory of parental affect-mirroring proposed by György Gergely and John S. Watson (Gergely & Watson, 1996, 1999), Daniel Stern's (2009, 2010) notion of forms of vitality, and Antonio Damasio's (1999) concept of background feelings. Thus, we hope to make a contribution to a larger anti-Cartesian agenda, which challenges the claim that the knowledge of one's own mental states is

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phylogenetically and ontogenetically prior to the knowledge of the mental states of other people (see Carruthers, in press).

We begin with a specific interpretation of William James's (1890/1950) classic theory of the duplex self: one in which the I-self is seen as a psychobiological unifying process that gives rise to different kinds of unity, corresponding to the different aspects of the Me-self. Within this framework for the study of the self, we make the hypothesis that *bodily* self-consciousness is the most minimal form of the Me; and what we want to understand is how an early form of *psychological* self-consciousness is constructed from it. To achieve this, we make the most of the social biofeedback theory as an attempt to posit the developmental mechanisms by which early social-cognitive competences, implemented in protoconversational exchanges with the attachment figure, give rise to the phenomenology of basic emotions.

According to the social biofeedback model (Gergely & Watson, 1996, 1999), the newborn child, while being able to cognize basic emotional expressions in others, enjoys no introspective knowledge of her own emotional states. Rather, such a knowledge is constructed through the caregivers' attuned and marked affective "mirroring" in repetitive episodes of nonverbal communication. This complex process progressively leads the child to internalize discrete emotions into her own inner life: the phenomenology of basic emotions is embedded into bodily self-consciousness, making the infant's bodily self-image an *affective* bodily self-image. The latter is then the first form of psychological self-consciousness.

Once more, to better understand the mechanisms underlying the construction of an affective bodily self, we take an integrative approach combining constructs such as "core affect" and "affect program" which are generally viewed as irreconcilable. More specifically, we will argue that the young infant, while possessing some abilities to recognize overt manifestations of affect programs in others, can have at most a "core-affect" phenomenology, one characterized by the dimensions of valence and arousal as posited in the circumplex model of affect. The two already mentioned constructs of vitality forms and background feelings will allow us to achieve a breakthrough in understanding the constructive processes underlying the experience of basic emotions.

Bodily self-awareness as the most minimal form of the Me-self

One of the reasons the notion of identity has played a key role in psychological sciences rests in the inextricable link between identity self-description and self-consciousness. This interweaving of identity and self-consciousness lies at the heart of Dan McAdams' (2015) Jamesian theory of narrative identity.

In the *Principles of Psychology*, William James (1890/1950) develops a theory of the self as a *process*, "the process of reflexivity which emanates from the dialectic between the 'I' and 'Me'" (Gecas, 1982, p. 3). The I is not a thing, not even a part, a component, or an aspect of the self: "[it] is really more like a verb; it might be called 'selfing' or 'I-ing', the fundamental process of making a self out of experience" (McAdams, 1996, p. 302). The Me is instead "the primary product of the selfing process"; it is "the self that selfing makes" (McAdams, 1996, p. 302). The Me consists in three forms of reflexive

experientiality—the material, social, and spiritual selves—which originate from the selfing process. It is "the making of the Me that constitutes what the I fundamentally is" (McAdams & Cox, 2010, p. 162).

James's I/Me distinction thus provides a definition of self-consciousness in terms of *identity*: self-consciousness is a self-describing, an identity forming, which is a unifying, integrative, synthesizing process (McAdams, 1997). In this perspective, James anticipates a number of theories in developmental and personality psychology that posit a general organismic process for integrating subjective experience—for example, Heinz Werner's orthogenetic principle, Jean Piaget's organization, and Carl Gustav Jung's individuation (see Ryan, 1995). All these constructs share—*mutatis mutandis*—the idea that reflexive experience takes shape through a unifying selfing process.

Now, the integrative selfing process gives rise to different kinds of unity, corresponding to the different aspects of the Me-self. Our hypothesis is that the most minimal form of the Me is bodily self-awareness; and the "spiritual" self originates from this "material" self.

This perspective is completely at odds with the theory of "strong primary intersubjectivity," namely, the claim that infants are born with a pre-wired organization of their minds that ensures a primary introspective access to their own mental states (Gergely, 2002). An example of such a position is Meltzoff and collaborators' hypothesis of a specific innate mechanism underlying intersubjective attributions during early imitative interactions. The affective behavioral acts of the other are mapped onto the infant's supramodal body scheme, allowing her to recognize the other person as "just-like-me" (Meltzoff, 2013). By imitating such acts, infants generate the corresponding feeling states in themselves; these are then *introspectively accessed* and attributed to the other by inference. This is in line with Goldman's (2006) neo-Cartesian view of knowledge of one's own mental states as a capacity that both ontogenetically precedes and grounds knowledge of the mental states of other people.[1]

Contrary to the strong intersubjectivist position, it can be argued that the initial state in development is a condition of *undifferentiation* between self, other, and the world. From an observer's point of view, one sees the infant interacting with others and the world, but the infant still has to draw the distinctions between inner and outer, subject and object, and self and other. In this more parsimonious framework, the distinctions will occur gradually, in the microsocial context of the interaction with the caregiver. This does not imply that the neonatal mind is devoid of subjectivity; it rather means that the newborn produces a rich subjectivity, but, being immersed in it, cannot objectify it. She is an active subject in the sense of being a functional center organizing action, but she cannot "have" herself as an active subject. Her experiential space is purely *objectual*.[2] Her affects, the need of contact, the oral yearning, the hunger, the possible gastric colic pains are not actually *hers* but are experienced as things and events in the same way as a light, a noise, a face above the cradle.

Once interpreted with the necessary methodological caution, the large amount of experimental data so often invoked to support the idea that infants under one year of age have "a primitive, proprioceptive form of self-consciousness already in place from birth" (Gallagher & Zahavi, 2014, section 1; see also Rochat, 2012) shows merely that they are access-conscious in the sense of being able to form first-order representations of objects and actions. In this perspective, when a baby of, say, six or eight months perceives, for

example, his hand, he perceives it as an item in the objectual field, *not as a part of his body*. Indeed, in order to perceive it as a part of his body, he ought to possess the ability to represent his body as a whole, which is not the case: it is over the course of the first three years of life that "an explicit visuo-spatial representation of one's body progresses from *early awareness of individual body parts* to *representation of the body as a whole* [emphasis added] in which the body parts together constitute a typical configuration that corresponds to others' bodies" (Brownell, Svetlova, & Nichols, 2012, p. 40).

Clearly, the onset of a bodily form of self-consciousness requires not only that the infant becomes able to represent her entire body. Let us consider when a child—between the ages of 18 and 24 months—becomes able to recognize their specular image in the mirror. Mirror self-recognition involves being able to form a bodily image of oneself as an entire *object*, and simultaneously taking this image as a *subject*, i.e., as an active source of the representation of oneself. Here the subject recognizes a new kind of object of consciousness: the object is the subject itself, or better, the objectified image of the subject—"it is *me* there." That this marks the agent's achievement of self-objectivation as "me" is also supported by the evidence that verbal and deictic self-reference and mirror self-recognition develop in close conjunction (Lewis & Carmody, 2008). The gradual emergence of the capacity for mirror self-recognition during the second year of life indicates therefore the onset of a new modality of cognition compared with the ability to build the image of any external object that is characteristic of animal consciousness in general, one that is unique to humans and only a few of the higher non-human primates.[3]

The question may be asked as to whether bodily self-consciousness requires the *concept* of one's own body. Musholt (2013) thinks it does. She argues—contra Bermúdez (1998)—that bodily self-consciousness requires an *explicit* representation of one's own body. The opposition between explicit and implicit is equated to the distinction between knowing-how and knowing-that; and this, in turn, is the way Musholt spells out the distinction between non-conceptual and conceptual. The concept of one's own body is therefore required in order to ascribe bodily self-consciousness.

However, representing something *as a certain thing* does not necessarily involve knowing-that. There is a sense of "seeing as" such that one can see a duck as a rabbit without *believing* it is a rabbit. Since, according to a standard account of concepts, these are the constituents of the content of propositional attitudes, representing something as a certain thing might not involve mastery of concepts, after all.[4] This opens the way to a more gradualist view, in a twofold sense. On the one hand, the transition from simple object-consciousness to self-consciousness is seen as more gradual; on the other, room is left for an intermediate level of representation, which is neither nonconceptual nor fully conceptual.[5] We are inclined to subscribe to this gradualistic stance, which, in the following sections, will inspire our reflection on the early development of psychological self-consciousness.

The acquired (mild) awareness of the body as one's own is the basic premise necessary to provide ourselves with that elementary reflexivity that allows us to know that we exist. Thus, self-consciousness in its most basic form, namely as awareness of one's own existence, is the cognizance of a physical identity. It rests not on a supposed pure and primary feeling of existing, but on a *self*-describability—the child gains access to the feeling of existing when she recognizes herself in a body distinguishable from others' bodies, when she comes to know herself as a bearer of physical, physiognomic, bodily features.

In what follows, we outline the process through which, on the basis of such a bodily self-awareness, an *introspective* form of self-consciousness takes shape. This point is particularly clear when looking at emotions, which are arguably the first kinds of mental states that are introspected by the child. Building on the late 19th-century James–Lange theory, (basic) emotions have been characterized as perceptions of aroused states of the body (Damasio, 1999; Prinz, 2004; Stern, 2009).

The social biofeedback theory of parental affect-mirroring is one of the most advanced models of the construction of emotional introspection (Fonagy, Gergely, Jurist, & Target, 2002; Gergely, 2004; Gergely, Koós, & Watson, 2010; Gergely & Watson, 1996, 1999). Contrary to what the theorists of strong primary intersubjectivity maintain, the model hypothesizes that infants have a primary bias to attend to and explore the external reality, and construct representations mainly based on *exteroceptive* stimulation. In contrast, the set of *visceral* and *proprioceptive* cues that are activated when being in and expressing an emotion state are not grouped together in such a manner that they could be perceptually accessed as a *discrete emotion*, i.e., an emotion episode designated by an individually separate and distinct category such as fear or anger. And when, at the end of a complex developmental process, the infant becomes able to introspect discrete emotions, what she finds is a state located somewhere in her body. In other words, bodily reflexivity is the experiential space where emotions are primarily located.

The social biofeedback theory of parental affect-mirroring

The social biofeedback theory took shape within the ethological and evolutionary framework of the theory of attachment. This is a *contextualist* and *systemic* perspective, in which psychological phenomena are investigated by putting them in the inter-individual and social context in which they arise and obtain a sense. With the adoption of such a perspective, the naturalistically oriented strand in dynamic psychology has drawn inspiration from a long tradition of ideas about the systems nature of development put forward by biologists, primarily by researchers in the field of developmental psychobiology. In biology the separation of the individual from the environment hardly makes sense. Both the development of Darwin's theory and the modern concepts of equilibrium, adaptation, innate/acquired interrelation, and ecological niche lead us to consider the individual–environment structure as a single systemic whole, where neither of the two poles is primary with respect to the other, and thus, also to consider the contrast between innate and acquired as obsolete. In animals as well as in human beings the development of the organism from the fertilized egg to reproduction and death consists in a series of structured interactions, each of which builds itself on the basis of the previous one, and each of which sees the interaction, on the one hand, of the onset of new "environmental" signals, and on the other, the gradual opening of new "inner" potentialities developed during the previous stages (Griffiths & Tabery, 2013).

This systemic approach to development informs the study of relationality in the psychodynamics of object relations and attachment. As Donald Winnicott (1956) puts it, what makes sense is not considering the infant in itself, but the *mother–infant dyad*.[6] The relationships that exist between the elements of the dyad are conceived as *bidirectional* or *reciprocal*, whereby one element that affects another may be influenced by it in turn.

This type of relationship has been variously referred to as "transaction" (e.g., Sameroff, 1975), "co-construction" (e.g., Baltes, Lindenberger, & Staudinger, 2006), or "interaction" (e.g., Bronfenbrenner & Morris, 1998).

The most recurrent context of dyadic, affective relationships involving a child and her caregiver are turn-taking protoconversational interactions. Both partners actively interact, reciprocally exchanging information during a conversation made up of imitations (but also of subtle episodes of desynchronization), improvisations, search for eye-to-eye contact, sensitivity to those dynamic features of behavior unfolding in time that Stern (2009, 2010) called "forms of vitality."

The social biofeedback theory of parental affect-mirroring is an explanatory model of these early affect-regulative caregiver–infant interactions. As described above, the model starts from the claim that at the beginning of life human infants are able to form mental representations mainly based on exteroceptive stimulation, while lacking a complementary capacity to understand their internal world. More specifically, with regard to that particular set of perceptual stimuli that are expressions of emotions, the model taps into the longstanding empirical research showing that young infants are already able to discriminate and respond to the caregiver's facial, bodily, and vocal displays of specific *basic emotions*.

In the Darwin-Tomkins-Ekman tradition, basic emotions (the most elemental among discrete emotions) are biologically based and pancultural packages of short-term, coordinated, and automated responses to events in the environment, which include *somatic* components (e.g., measurable physiological changes), *motor* components (e.g., facial, bodily, and vocal expressions), and *motivational* components (i.e., action tendencies). These responses are assumed to be automatically elicited and coordinated by a causal, neurocomputational mechanism called the "affect program" which is elicited by automatic appraisals (Ekman, 1972, 1999; Tomkins, 1962).[7] That young infants are innately able to recognize the overt manifestations of affect programs in other agents is what we mean when saying that they "detect" basic emotions—or, in other words, that they are "sensitive to" affect programs. In the next section, we will go more deeply into this point by suggesting that what infants seem to be initially sensitive to are *forms of vitality*, the multimodal structures described by Stern (2010).

Conversely, very young infants' basic emotion states include no *feeling* component—i.e., there is no reflection of aspects of the other basic emotion components in infants' first-order consciousness.[8] Initially, the set of internal visceral and proprioceptive cues that are activated when being in and expressing an emotion state are "not grouped together categorically in such a manner that they could be perceptually accessed as a distinctive emotion state" (Gergely & Watson, 1999, p. 110).[9] Rather, we can ascribe to very young infants "the mental representation of bodily changes that are sometimes experienced as feelings of hedonic pleasure and displeasure with some degree of arousal" (Lindquist, Wager, Kober, Bliss-Moreau, & Barrett, 2012, p. 124). In the transition from these primitive and simple feelings to the awareness of discrete emotional episodes—e.g., "awareness of being 'angry', rather than just experiencing some undifferentiated negative state of tension" (Gergely, 2004, p. 58)—a fundamental role is played by protoconversational interactions.

During protoconversations, well-attuned adults are spontaneously inclined to mirror the infant's affect-expressive displays in a "marked" way: in response to the child's realistic emotional expressions, adults tend to display rather congruent but schematic and often exaggerated behavior, frequently characterized by an incongruent element—as, for example, when the adult responds to a crying child with an expression that, while being initially very sad (as expected by a perfect mirroring), turns rapidly to a smile; or when he responds to a happy child with an expression mixing joy (i.e., the mirrored expression), tenderness, and possibly surprise. And empirical data attest that the infant is able to register the high-but-not perfect degree of contingency[10] between the parental mirroring and her ongoing affective experience.

The expressive exaggeration of the parental mirroring, coupled with the soothing tone and the lack of the typical behavioral consequences of genuine expressions, fulfills a first function of mitigating what would have an excessive arousing effect for a young baby, still incapable of affective self-regulation. In particular, negative behavioral consequences for a sad infant are avoided or mitigated by a "non-fully sad response," thus escaping a vicious circle the infant would be unable to escape from.

At the same time—and most importantly in the present context—marked expressions have a crucial *pedagogical* function (Csibra & Gergely, 2011). By simultaneously making salient central aspects of the somatic emotional manifestations and signaling that the displayed emotion is "not for real," the adult encourages the child to "decouple" the emotional expression from its apparent referent. Once decoupled, however, the affect-mirroring display still needs to be interpreted by the infant as referring to "someone's emotion." The adult's gaze, ostensively and continuously directed to the infant, helps her to "referentially anchor the marked mirroring stimulus as expressing … her *own* self-state" (Gergely & Watson, 1999, p. 117). In such a process, the child becomes progressively sensitive to her emotional state, which she can now recognize in its multiple, distinct components. The expression "social biofeedback" used to designate such a process aims at recalling the terminology used in the physiological domain to denote what happens when, for example, someone is sensitized to their arterial pressure through being exposed to a monitor displaying their internal situation. In the social domain, the outcome of the same kind of process is the phenomenology of discrete emotions.

To sum up, we can observe that the parental affect-mirroring serves mainly two functions. A function of *sensitization*: the infant becomes more and more sensitive to the set of internal physiological and proprioceptive cues that are active while her affect-expressive behavior is controlling the adult's marked affect-mirroring expressions. A second, equally important function of *representation building*: the separate representations of the caregiver's affect-mirroring displays become associated with the infant's primary and procedural affective states; as a result, they form *secondary representations* that pertain to those primary affective states and provide the basis for the infant's emerging ability to control her emotion states.

Having illustrated the basic features of the social biofeedback model, we turn now to trace it back to the literature on emotions. Theories coming from different traditions will help us to establish a more solid epistemological frame and, at the same time, to unfold

more precisely the nature of biofeedback and stress the role of the bodily self in the construction of the psychological self.

Affect programs, core affect, forms of vitality, and background feelings

We now need to examine the social biofeedback model's commitment to basic emotion theory. Although the unconditional claim that each affect program emotion has a unique bodily response profile (see Griffiths, 1997, pp. 79–84) can be disputable, still it seems plausible to maintain that each basic emotion has a limited set of typical expressions that human beings (probably together with many other animal species) are innately able to detect. The most precocious sensitivity probably concerns *vocal* expressions: newborns already display different reactions to happy vs. other speech patterns (Fernald, 1993; Mastropieri & Turkewitz, 1999). By four months of age infants become able to discriminate, both in protoconversation and in more structured settings, among happy, angry, and neutral *facial* expressions (D'Entremont & Muir, 1999; Serrano, Iglesias, & Loeches, 1995). In turn, 18-month-olds not only are capable of distinguishing "dislike/disgust" from "joy/interest" facial-vocal expressions directed toward objects (Egyed, Király, & Gergely, 2013), but they also exploit this information to modulate their cooperative behavior.[11] Indeed, the evolutionarily plausible fact that human beings are endowed with innate emotional programs and parallel innate discriminative capacities does *not* imply that such competence is present at birth, at least in its full-fledged form (Sroufe, 1996). Understanding others' emotions is a complex matter. For example, one has to detect differences among emotional expressions, as well as among emotional and neutral expressions (for an overview on developmental studies, see Camras & Shuster, 2013).

Starting from the initial, arguably innate level, the refinement process of such a biologically grounded competence mostly occurs in protoconversational routines, during which (at least) vocal, auditory, and touch stimuli occur together (to appreciate the significant role of multimodal stimuli in boosting emotional competence, see Walker-Andrews, 2008). A crucial contribution to understanding the nature of these developmental processes comes from the paradigm of infant research, most notably from Stern's analysis of the role of vitality forms in the process of emotional understanding.

Forms of vitality

Decades of microanalytic research on mother–infant face-to-face communication led Stern (1985, 2009, 2010) to conclude that since infancy humans give sense to other people's basic emotional manifestations by detecting their *forms of vitality*.[12] The latter are multimodal expressions of the temporal contour of actions, structures that unfold the dynamic manifestation of inner states:

> For instance, a minute variation in the temporal contour, force, or direction of the actions may let the recipient of the action, as well as a neutral observer, to understand whether the agent is gentle or angry, whether he or she performs the action willingly or hesitating, and so on. (Rochat et al., 2013, p. 1919)

Vitality forms are perceived as wholes. They are *Gestalten* originating from five components: movement, force, temporal contour, space, and directionality/intentionality. Some examples are: *exploding, surging, accelerating*, and *fading* forms.

In many passages, Stern remarks that vitality forms are *not* emotions;[13] rather, they are structures of dynamic behavior, which can contain emotions as well as fantasies, streams of thoughts, desires, and so on. Thus, a content (a desire or an emotion) can have an exploding form, or a fantasy can have a surging form.

It seems plausible, therefore, to suggest that infants precociously represent other people's emotional manifestations mainly as forms of vitality; or, in other words, that vitality forms are one of the major components of infants' third-personal emotional competence. We pointed out above that an initial relatively high degree of competence in detecting other people's emotions contrasts with children's very limited phenomenology of their own inner states; and the social biofeedback model was proposed as a promising account of the process that leads to emotional introspection. What we intend to argue now is that vitality forms also play a central role in that process. But first things first.

Core affect

Within the social biofeedback framework, self-directed emotional capacities are less neurocognitively guaranteed and more markedly constructivist compared with the other-directed emotional abilities.

We suggested above that newborn infants' primary affective experience consists in a raw feeling that originates from combining in an integral fashion the two dimensions of valence and arousal. This integral blend of hedonic (pleasant–unpleasant) and arousal (activation–deactivation) values is termed "core affect" within the framework of *psychological constructionism* (e.g., Barrett & Russell, 2015; Russell, 1980, 2003, 2015). Note that the latter is not specifically a *developmental* theory in that *each* emotion—and hence also in adults—is seen as being built out of core affect (together with other ingredients). Nevertheless, it is precisely from this developmental perspective that we are interested to make use of it.[14]

It may be supposed then, that from birth, information about the environment is translated into a core affect, namely coded as a mental representation of bodily changes that are sometimes experienced as hedonic feelings with some degree of arousal. This affective coding enables newborn infants to discriminate whether an object or situation is helpful or harmful, rewarding or threatening, requiring approach or withdrawal, acceptance or rejection, incorporation or expulsion (Barrett, Mesquita, Ochsner, & Gross, 2007, p. 377). Core affect is both the product of two neurophysiological systems (one related to valence and the other to arousal), and the subjective experience of this neurophysiological activity as feelings of acceptance-pleasure-reassurance-incorporation or feelings of rejection-insufficiency-distress-expulsion, which are all to some extent arousing or quieting. It is on the basis of these kinds of primary appraisals that the newborn infant begins to organize a relationship with the world. In other words, the original form of differentiation of the human organism's purely objectual experiential space (see first section) occurs in accordance with core affect.

According to psychological constructivism, in view of being the initial experience restricted to the phenomenology of core affect, the richer and more discriminative experience of "folk emotions" (i.e., emotions as individuated by everyday language) can take shape only at a later stage. Unlike core affect, which is automatically felt, the full-fledged, discriminative experience of folk emotions is *constructed* by superimposing a conceptual grid over the flow of rough sensations (Barrett & Russell, 2015). No specific neurocognitive mechanism automatically and mandatorily serves the recognitional processes;[15] only general-purpose processes take place.

Actually, constructivists differ in important ways on the *specific point* where concepts intervene. While Russell explicitly remarks that concepts are necessary to recognize emotions, Barrett (2006) seems to endorse a strong version of linguistic relativism when writing that "[i]n the case of emotion, language shapes core affective phenomena into the emotional reality that we experience. Language not only enters into the categorization process, but it also directs the development of emotion category knowledge in the first place" (p. 37). For our part, while admitting some reasons to suspect that language could exert a (strong) influence on the meta-experiential level, we believe that the claim that emotional experiences are linguistically mediated is hopelessly out-of-date in the contemporary domain of cognitive sciences.

Nonetheless, a critical issue still remains for our developmental perspective: while in adult humans, core affect feelings are only the starting point of a constructive process leading to the awareness of discrete emotional states, very young human infants—and non-human animals—are unable to refine their low-level, pre-conceptual knowledge. Still, while the cognitive limits of non-human animals will permanently impede progression, in the human child's case, the gap will be filled through social biofeedback. This long-lasting, reiterated process starts from core affect experience and progressively structures the conceptual self-knowledge necessary to full-fledged introspection. We argue that forms of vitality and bodily knowledge both have a role to play in this story.

Forms of vitality and background feelings

We are now in a position to bring out points of contact between the social biofeedback model and emotional constructivism. In a nutshell, introspection does not come for free and necessarily involves some steps of construction. Nonetheless, the *nature* of experience—at its various levels—still is not clear. In particular, it is not clear which role, if any, the *body* plays in the construction of emotional introspection. To tackle this point, the notion of forms of vitality may be helpful again.

Stern introduced his theoretical construct not only to describe the dynamic forms that we perceive in others' behavior; he also stressed—notably in his last writings—the role of vitality forms in early *self-experience organization*: pre-conceptual experience, i.e., "the experiencing of the dynamics of a happening" (2009, p. 308; see also 2010), which precedes the two forms of conceptual experience (respectively, non-verbal and verbal reflexive experiences). To say that gestaltic forms of vitality are the form of experience amounts to saying that what the pre-conceptual child makes experience of is a mix of

their (abovementioned) five components: movement, force, temporal contour, space, and directionality/intentionality.

It seems clear to us that these five dimensions, once grasped pre-conceptually as a Gestalt, can be traced back to the two dimensions of valence and arousal that characterize the initial infantile phenomenology of emotions. Indeed, once grasped through a multimodal, perceptual process, movement and its contour, as well as space and intentional direction, jointly convey information about pleasantness/unpleasantness and relaxed/activated behavioral attitudes, both when perceived in others and registered in our own body. At the same time, they convey information about the temporal development of actions, thus adding some important cues about the dynamics of our basic feelings. On the other hand, we also know that, according to the constructivists, states defined uniquely through a low-level appraisal leading to a raw antinomic dimension correspond to a sort of proto-emotion, extensively under-differentiated states that are experienced by young infants still deprived of the emotional conceptual repertoire necessary for full-fledged, recognitional experiences. We can thus conclude that, although not explicitly taking part in the constructivist debate, Stern defends a position which is perfectly coherent with it.

Moreover—and crucially for our reasoning—Stern explicitly acknowledges resonance between his forms of vitality and Damasio's notion of *background feeling*, defined as the feeling of what is happening, moment by moment, to our own body.[16] A couple of quotes from Damasio (1999) will clarify the point: "Most of the time we do not experience any of the six emotions … But we do experience other kinds of emotions, sometimes low grade, sometimes quite intense, and we do sense the general physical tone of our being" (pp. 285–286). A few lines below:

> Background feelings arise from background emotions,[17] and these emotions, although more internally than externally directed, are observable to others in myriad ways: body postures, the speed and design of our movements, and even the tone of our voices and the prosody in our speech. (p. 286)

To resume, background feelings are the mental images that arise from neural patterns representing biological changes in our *body* and *brain*, such as, *inter alia*, fatigue, energy, excitement, wellness, tension, relaxation, and stability. Nevertheless, limiting ourselves to notice Damasio's proximity to Stern would lead to seriously underestimating a crucial point for us. By explicitly endorsing Damasio's well-known position, Stern emphasizes the role of the *body* in the construction of psychological introspection. What we feel—the emotions we experience—issues in an important sense from representations of states of the body. The echo of William James's (1884) theory of emotion cannot but be perceived, interlaced with a point that, conversely, distinguishes Damasio from Stern: while obviously originating from the external world—often, from the external *relational* world—background feelings represent only the "internal side." More precisely, they represent the ongoing states of a body that is connected to the external (be it physical or social) world without conveying representations of the world itself. On the contrary, in Stern's view, vitality forms are more explicitly intentional and relational. They not only represent a state of our own body, but they are the consequence of our being in

interaction with the vitality forms of another agent (in most cases, a real agent, but also with agent-like objects such as music, waves, bouncing balls, and so on). In this sense, the interpersonal nature of self-construction appears more neatly in Stern's approach. But, thanks to Damasio, Stern's selfing processes are now supplemented with a stronger accent on the corporeal dimension.[18]

Conclusions: Drawing the strands together

Our article has sketched a recipe for constructing an inner experiential space through socio-biofeedback. In baking our cake, we grappled with some matters which are not addressed by Gergely and Watson's model (1996, 1999). Now we turn to resume the main steps of our analysis, stressing their relevance to the central issue of the relationship between first- and third-person knowledge.

The newborn child is immersed in a purely objectual experiential space structured in valence dimensions with some degree of arousal; this is a world in which both the material and the spiritual selves are far from being in place. The construction of bodily self-consciousness takes time, starting from an early awareness of individual bodily parts that are experienced in the objectual field (for details, see Di Francesco, Marraffa, & Paternoster, 2016, Chapter 2). But the work to do in order to construct psychological self-knowledge is even harder. At first, the child is quite unable to introspectively access her own emotional states while possessing some basic abilities to discriminate emotional expressions in others, at least in caregiving contexts. Through a complex biofeedback process starting from marked mirroring, she becomes progressively able to embed the phenomenology of basic emotions into her bodily self-consciousness, thereby attaining a first form of psychological self-consciousness. What this initial introspective universe ultimately contains is an *affective bodily* self-image. Although we are not committed to the Jamesian idea that *all* emotions are but perceptions of aroused states of the body (Damasio, 1999; Prinz, 2004), the earliest cognition of mental events appears to be the outcome of the acquired capacity to interpret "primary somatic data specific to categories of affective states and of attributing them to the self" (Hernik, Fearon, & Fonagy, 2009). Self-consciousness is thus a construction all the way down, which develops from automatic and pre-reflective processing of representations of objects (object-consciousness), through awareness and then self-awareness of the body, up to introspective self-awareness and then narrative identity.

To unpack the main steps of this process, we took an integrative approach to emotions, combining constructs belonging to traditionally opposed perspectives such as basic emotion theory and constructivism. We also made crucial reference to Stern's forms of vitality, which were regarded as the first emotional vehicles perceived both in others' behavior and in ourselves.

The focus on emotional "dialogues" mediated by forms of vitality highlights the active role of the child: far from being a passive recipient, she is an active information seeker, a co-constructor of a shared emotional world, as well as of her own internal emotional space (Greenwood, 2015) and her attitude to external reality—for example, in social referencing (Walden & Baxter, 1989). Consequently, healthy interpersonal styles must be conceived as issuing not only from parental styles but more widely as the

product of a continuous emotional-perceptual-cognitive dialogue that, mainly conducted by the adult, is modulated by the child's responses.

We trust that our analysis can help to promote the integration of cognitive science theorizing on emotions into that contextualist and systemic perspective from which the theory of attachment approaches the caregiver–infant relationality. For the activation and corresponding perception of vitality forms may be seen as part of longer emotional episodes, where emotions are social signals designed to change the behavior of other organisms. Here, a social transactional perspective on emotions earns its keep; one in which emotional behaviors are viewed as signals designed to influence the behavior of other organisms, or as strategic "moves" in an ongoing transaction between organisms. Human beings, as well as other animals, usually exercise their emotional skills in interpersonal contexts that trigger and shape what could be seen as an "affective dialogue." Emotional manifestations depend on the individual's internal states, but in most cases also depend on the response of the individual facing it/him/her, in a sort of communicative emotional cycle (Hinde, 1985). An episode of disagreement in a couple of persons, as well as in a couple of other animals, does or does not escalate depending on the reciprocal reactions of both partners. The same is true of a couple constituted by a child and her caregiver: the first reacts emotionally to an event perturbing her homeostasis, thereby sending a signal to the adult who, in turn, reacts and continues the emotional dialogue. As a result, an emotional episode is "[d]ynamically coupled to an environment that both influences and is influenced by the unfolding of the emotion" (Griffiths & Scarantino, 2009, p. 438).

Finally, a clarification on the way in which our socio-constructivist approach to affective introspection contributes to an anti-Cartesian agenda. We maintained that all along the process leading to the construction of psychological self-knowledge, the child recruits some hetero-directed competence and redirects it to understand herself: since the beginning, knowledge of her own mind depends on interactions with the attachment figure, whose emotional expressions the child can understand better than she understands herself.

At first glance, this account could appear to be a mere application of Peter Carruthers' (2011) "third-person-first" hypothesis, according to which mindreading (i.e., third-person mentalization) has a functional, evolutionary, and—most relevant here—developmental priority over introspection (i.e., first-person mentalization).[19] But this is not the case. First, Carruthers's analysis is fully immersed in the epistemic literature centered on false belief understanding. For our part, far from denying the importance of that research, which has established (*inter alia*) the precocity of mindreading, in this paper we have focused on a different dimension, arguing that the first steps of introspective knowledge concern emotions and the body containing them. Moreover, we never suggested that a *fully* third-person emotional competence—taking place at a metarepresentational level—precedes and grounds the corresponding first-person knowledge. Rather, we have limited ourselves to suggesting that some more refined hetero-directed competence scaffolds, in the emotionally rich protoconversational context, a corresponding self-directed competence still waiting to bloom.

Acknowledgements

We thank Alfredo Paternoster and Marco Viola for their helpful comments on earlier drafts of this article.

Author Contribution

This is a co-authored paper where each author has equally contributed to its production. However, Massimo Marraffa is especially responsible for the analysis of the affective bodily self-image as the earliest form of psychological self-consciousness, while Cristina Meini mostly focussed on the role that forms of vitality play in the process that leads to affective introspection.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. Other intersubjectivist theories do not possess such a marked "Cartesian" connotation. According to Trevarthen (1979), for example, children have an innate propensity to engage in social interactions with adults during which they can attribute mental states to others as well as to themselves, in a deeply rewarding "sharing" experience.
2. As Lyyra puts it, "Originally, only world is given to the subject" (2009, p. 76). This is the author's formulation of what Fonagy et al. (2002) call "psychic equivalence."
3. It is true that self-recognition capacity has been detected in many animal species, from mammalians to birds. However, in most cases, epistemological caution clearly suggests a *lean* interpretation according to which animals pass this test because of kinesthetic-visual matching skills. Actually, such deflationary interpretation has been put forward also in the human case, as opposed to *rich* interpretations (e.g., children's mark-directed behavior is evidence of an introspective form of self-consciousness and a self-concept inherently linked to understanding the mental states of other people) and proposals lying somewhere between the two. Taking, as we do, mirror self-recognition as a marker of *bodily* self-consciousness falls within this last option. For references, see Kristen-Antonow, Sodian, Perst, and Licata (2015).
4. We owe this remark to Alfredo Paternoster (Personal communication, August 11, 2014).
5. Other authors have argued for the existence of such an intermediate type of content (see, e.g., the notion of proto-proposition in Peacocke, 1992); and even Musholt (2013, p. 654, note 12) endorses a gradualist account of (conceptual) content.
6. See also Sameroff's transactional model, where both the mother and the child with their strengths and vulnerabilities are active partners in dyadic interaction (Sameroff, 1993).
7. Other researchers speak of "basic emotion systems" (Panksepp & Watt, 2011) or "basic emotion mechanisms" (Levenson, 2011). Despite these terminological differences, these accounts all agree that basic emotion programs/systems/mechanisms are causally responsible for the coordination of organismic resources toward the goal of efficiently dealing with an evolutionarily relevant emotion-specific life task.
8. Here we are using the conceptualization introduced by Moors (2012, p. 258).
9. The role of the caregiver in the discriminative process could explain, *inter alia*, the existence of different nonverbal dialects in emotional expression, empirically attested by Elfenbein (2013).
10. This process of "referential anchoring" depends indeed on the functioning of the so-called "Contingency Detector" (Gergely & Watson, 1996, 1999), an innate computational

mechanism that would enable the infant to analyze the conditional probability of three contingent relations—temporal contingency, spatial similarity, and correspondence of relative intensity—between their own actions and effects in the external environment.

11. After having perceived the experimenter's attitude (expressed through voice and face) towards two objects, in the subsequent cooperative condition the child offers her the object she looked at with positive attitude.
12. For a careful analysis of the nature of the notion in different moments of Stern's theorization, see Køppe, Harder, and Væver (2008).
13. To avoid any confusion between forms of vitality and emotions, Stern (2010) came to the point of changing their initial name. Indeed, when he first introduced the notion, Stern (1985) used the expression "vitality affects."
14. Conversely, we are neutral concerning the constructivist claim of the *conceptual* nature of adult emotional experience. More precisely, although we are inclined to believe that adult basic emotional experience is *not* a conceptual construction, we do not intend to take a position on this debate here.
15. All versions of psychological constructivism reject the very basis of the affect program hypothesis: there is no specific causal mechanism staying in one-to-one correspondence with a folk emotional term and automatically delivering a certain output whenever the organism faces a certain sort of input. Of course, evolutionary processes have shaped neural circuitries allowing rapid and mandatory reactions to environment changes, such as LeDoux's (2014) defensive survival circuits. But, importantly, constructivism sees these neural mechanisms as not being specific to emotions; rather they are only a component in a causal pattern leading to an emotional experience—as LeDoux himself has recently recognized, the threat conditioning system should not be confused with a (non-existent) specific mechanism delivering fear experience.
16. Damasio in turn acknowledges that his notion of background feeling "is similar to the notion of vitality affects presented by the developmental psychologist Daniel Stern" (1999, p. 287).
17. Damasio notoriously distinguishes between *emotions*—which are bodily states—and *feelings*—which are mental representations of emotions. With this distinction, he puts himself beyond one of his main reference authors, James, who takes emotions to issue from the *perception* of bodily states.
18. It is also worth noting that the extensive, empirical research carried on by Damasio strengthens a construct—that of vitality forms—which otherwise risks being elusive (see Køppe et al., 2008). Actually, we are persuaded that our analysis can further support this direction of research to the extent that it is an alternative to the received view which sees Stern (and, for this point, also Damasio) as providing empirical evidence for pre-reflective self-consciousness (see first section of this article).
19. "[A]wareness of the mental states of other people emerges first in ontogeny, and is likely [to] be an adaptation that evolved to undergird human, ape, or primate social life" (Carruthers, in press).

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