

On being the object of attention: implications for self–other consciousness

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Joint attention to an external object at the end of the first year is typically believed to herald the infant's discovery of other people's attention. I will argue that mutual attention in the first months of life already involves an awareness of the directedness of attention. The self is experienced as the first object of this directedness followed by gradually more distal 'objects'. This view explains early infant affective self-consciousness within mutual attention as emotionally meaningful, rather than as bearing only a spurious similarity to that in the second and third years of life. Such engagements precede and must inform, rather than derive from, conceptual representations of self and other, and can be better described as self–other conscious affects.

'I see it feelingly' (Gloucester, *King Lear*, Act IV, Scene 6)

What does it take to be aware that someone is attending to you? Cognitive developmental psychology's answer to this question has been that higher-order representational capacities must develop before an organism can be aware either of others as 'attending' beings, or of itself as a potential object of that attending. According to this view, the awareness of others as attending beings begins with 'joint attention' (i.e. the joint engagement of infant and other person with an object) at around 12 months in human infancy. Furthermore, the awareness of self as an object develops in the middle of the second year with the ability to construct a concept of self and recognize oneself in a mirror. In sum, it is argued that you need the cognitive skills of a 12- to 18-month-old human infant to be aware that you are being attended to by another organism.

I will argue that these views are implausible in the face of how infants actually interact socially. I suggest an alternative account in which, contrary to the above views, early infant engagement with others' attention does indeed show an awareness of others as attending beings [1], as well as an awareness of self as an object of others' attention (see Fig. 1). This awareness must lead to, rather than result from, representations of self and other as psychological entities [2,3]. This perspective assumes what one might call a 'second-person' approach to the developing awareness of self and other. An alleged chasm between first-person and third-person awareness is often cited as

the reason for needing a representational bridge (usually late in infancy) to allow infants to recognise others as subjective beings similar to themselves [4]. The present account, on the other hand, considers information within mutual engagement as permitting a qualitatively different kind of awareness, which provides an emotional, non-representational, link between self and other.

The awareness of others' attention in the first year

When do human infants become aware of others' attention? Here, I will present what I take to be some of the central evidence of awareness of others' attention within a variety of engagement contexts especially that of mutual attention.

Others' attention to the self

Infants of about 2 months of age react to attention to self with a variety of emotional reactions. They smile more when adults make eye contact with them, and less when adults look away (e.g. at their ears rather than at their eyes) [5]. They become elaborately expressive with coordinated timing in response to attention [6,7]. They show distress at being unable to disengage from another's gaze [8] or when gaze directed at them is still-faced or non-contingent [9]. They can show indifference to attention through clear, repeated and disinterested avoidance of gaze [10]. They can also show coy reactions to renewals of attention, combining intense smiling with brief gaze and head aversion sometimes accompanied by raised curving arm movements, an expressive pattern often considered the archetypal self-conscious display [11]. These responses can be elicited in a variety of contexts, including to the self in a mirror, although they are initially most common to familiar adults. By about 4 months of age, infants not only respond to attention directed towards them but also make active attempts to direct others' attention to the self with 'calling' vocalisations when attention is absent [12]. They also, at this age, initiate games in which they repeatedly invite, and then turn away from, others' gaze [13,14].

Others' attention to acts by the self

After the middle of the first year, infants engage with others' attention directed not just to themselves as a whole, but also to specific *aspects* of the self, such as their actions [15]. The emotional content of these engagements

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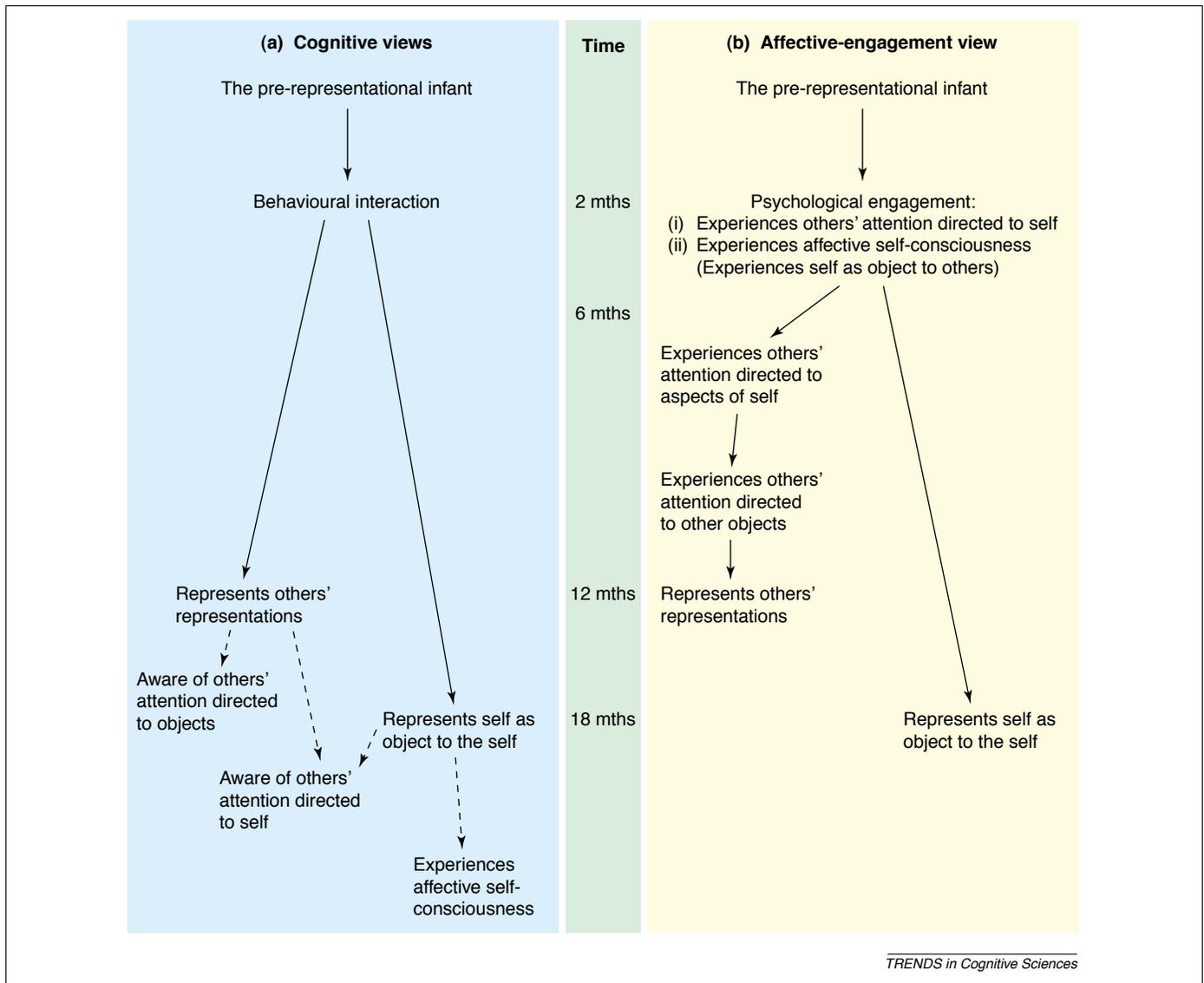


Fig. 1. Awareness of self as the object of others' attention. (a) The conventional view from cognitive developmental psychology. (b) The affective-engagement view, in which the experience of self as object to others occurs at a much earlier stage of development.

varies. It might involve:

- (i) showing-off: the performance of exaggerated or unusual actions to gain attention when it is absent or to retain it when the centre of attention [16,17];
- (ii) clever actions: repeating acts to re-elicite praise, or checking on others' attention with pleasure after the completion of difficult actions;
- (iii) clowning: the repetition of odd actions that have previously led to laughter to re-elicite laughter [18]; or
- (iv) teasing: deliberate provocation through the performance of actions contrary to existing expectations or routines [19].

The variations in both emotional content and action routines suggest that these behaviours represent neither simple response-reinforcement contingencies nor a mode of engagement with no relevance for awareness of attention. The infant seems aware that others' attention is related to the things that he or she does.

Others' attention to external objects

By the end of the first year, engagements between infant and other persons in relation to external objects are well documented [20]. Responses to others' attention to things in the world indicated by head turning to follow gaze at ~10 months develop by ~12 or 14 months into active attempts to direct others' attention to the world [21].

Others' attention to objects in time

From the middle of the second year the infant is able to engage others' attention not only to things external in space but also to events distant in time [22,23]. The infant remembers the things that others have or have not attended to, and selectively directs attention to aspects that have not been attended to, for example, on the mother's return from work asking the nanny to 'show Mummy' the potty!

Table 1. Expanding awareness of the objects of others' attention

(from) Age	The object of the other's attention	Infant response to, and action upon, other's attention
2–4 months	Self	<i>Responding:</i> to others' gaze to self with interest, pleasure, distress, ambivalence, indifference and coordinated expressions <i>Directing:</i> making 'utterances', 'calling' attention to self, seeking face-to-face engagement
6–8 months	Frontal events and targets	<i>Responding:</i> following others' gaze to frontal targets; gaze alternation between target and attentive other person, with interest, pleasure, anxiety, indifference <i>Directing:</i> no known evidence
7–10 months	Acts by self	<i>Responding:</i> to others' attention to acts by self with pleasure, interest, anxiety <i>Directing:</i> repetition of acts that elicit laughter/attention/praise, with gaze to others' faces
9–11 months	Objects in hand	<i>Responding:</i> to others' gaze at objects in hand? Evidence unclear <i>Directing:</i> beginning of showing/giving objects in hand
10–14 months	Distal targets	<i>Responding:</i> following others' gaze to non-frontal, distal targets <i>Directing:</i> going across room to fetch objects to give; pointing to distant objects
15–20 months	Past events, absent targets	<i>Responding:</i> attending to others' reports of past events and absent targets? Evidence unclear <i>Directing:</i> discriminating absence of attention, reference to past events

The developing objects of others' attention

The 'primordial sharing situation' of the infant and mother [24] seems to become elaborated in systematic ways (Table 1). Such evidence suggests that the infant is emotionally aware of the attention of others from very early in life; what appears to be developing is an awareness of the objects to which others' attention can be directed: the first of these is the *self*, followed by what the self *does*, then what the self *perceives*, and then what the self *remembers*. There is also evidence of developmental shifts from reactive to initiating actions by the infant for each object of attention throughout the first year, and not just to external objects at the end of the first year as others have noted [21]. This differentiation of objects away from the self further shapes and expands the meaning of others' attention for infants. There have been many recent arguments that attention is not like a spotlight being directed into space, but is in fact object-based [25]. If this is the case, then perceiving attention in others must also be crucially informed by perceiving the objects that guide their attention. Just as attention and objecthood are intimately and importantly related, so also must being an object and being attended to be intimately related. In fact, perceiving attention in others could emerge from the experience of being an object of attention, just as perceiving an object gives shape to attention itself.

The need to take mutual attention seriously

Although a variety of methodological reasons are offered for caution about evidence from mutual attention, the reason for its relative neglect in many standard views [26] can be attributed to two factors. First there is a general commitment to an internalist definition of attention in which 'looking behaviour' is seen as distinct from the 'inferences about seeing' that it is supposed to index. However, this dualism of mind and behaviour ultimately disallows any differentiation between the two: *all* actions can be explained away as merely behavioural phenomena

(see, for example, Perner's explanation of joint attention as merely a test of behavioural reactions [27,28]).

Second, there is a conflation of an awareness of the directedness of attention with the awareness of its directedness to the external world [29]. Even in approaches that avoid internalist definitions and explore the object-directedness of attention, the omission of self as an object hinders explanation. For example, Woodward argues that others' gaze (involving relation at a distance) has no direct effect upon the object, nor necessarily any obvious consequences for the 'looker' [29]. She concludes, therefore, that a relation between 'looker' and object is more difficult to recognise than, for example, between 'grasper' and object, and does not develop until ~12 months of age. However, this conclusion is only warranted if one disregards evidence of the self as an object of another's gaze. If the self is the object of another's attention, the relation between 'looker' and object can indeed be directly experienced by the infant; it does not need to be inferred. On this basis, the infant's awareness of the object-directedness of attention is evident from the early months.

Affective self-consciousness

One common indicator – both in life and in science – of telling when someone is aware of another's attention is affective self-consciousness, the most socially salient of which are hiding the self in shyness, embarrassment or coyness, or exposing the self in showing-off or preening; both are usually a response to attention [30]. Adopting the view that one cannot *feel* self-conscious until one has a self to feel conscious about, Lewis argues that the earliest self-conscious affects (exposure-embarrassment, empathy and envy) emerge in the middle of the second year with the ability to represent the self to oneself. Others, such as evaluation-embarrassment, pride, guilt and shame, depend on the additional capacity to internalise standards and rules and emerge at around 3 years [31]. However, displays akin to exposure-embarrassment and to pride are evident



Fig. 2. Example of embarrassment-like responses in a 2-month-old. The sequence shows the infant catching sight of herself in the mirror and gazing intently with raised eyebrows, followed by the beginnings of a smile, which widens as the infant averts her eyes and turns away from the mirror. The infant then immediately looks at herself again in the mirror (not shown). Reproduced from Ref. [11] by permission of Blackwell Publishing.

from well before the second and third years, although in simpler contexts (see Fig. 2 and Table 2).

Continuities and developments in affective self-consciousness

The emotional reactions of coyness and showing-off precede the emergence of conceptual representations of the self. There are parallels between the simple hiding and exposing of the self in the first few months and the hiding and exposing of its actions in the second half of the first year, and there are continuities throughout the first 3 years in embarrassment-like and pride-like displays. If it were the case that until explicit representations of the self developed there could be no self-conscious emotional reactions, then one must ask why infants in the first year are showing such clear patterns of non-fearful self-occlusion and self-exposure.

The account I am offering of infants' awareness of self as an object of others' attention avoids this paradoxical situation, suggesting that before the infant has a conception of him or herself, he or she is aware of being an object to others (see also [32]). Very early in the first year other persons are known by the infant, both through an intuitive awareness and through weeks of associationist learning [33] as 'seeing persons', and are perceived as looking at 'me'. The infant knows the 'me' experientially as a self who can be attended to by others (as well as the self who can act in physical space [34]). The other person's attending is perceived rather than represented and the self's objecthood is experienced rather than conceived.

It also supports arguments that self-conscious emotional reactions might, in fact, contribute to higher-order representations of the self. Recent arguments about the subcortical basis of the affective core of the self [35], criticisms of the value of the mirror self-recognition test [36] and evidence of much earlier bodily self-recognition [37] cast doubt on any clear distinction between subjective and objective self-awareness. The development of the 'me', it would seem, is neither parallel to nor emergent from the development of the 'I' [31]; it might be simply inseparable from it.

Self–other conscious affects

One solution to these theoretical contradictions could be to re-consider the terminology we are using. Because embarrassment is deemed a self-conscious emotion in English, we might be imposing an explicit focus on self. It could be the case that in some emotion experiences, which could be described as more world-focused than self-focused (including some 'self-conscious' ones), there *is* awareness of the self but only implicitly, mainly as a ground and as perceptually recessive [38]. I suggest that these affective reactions are better labelled 'self–other' conscious affects. Lambie and Marcel, in fact, consider shame and pride – classically considered unavailable to infants – as being available both as first-order and second-order emotion experiences. As the former, they range from perception of the gaze of others as impinging or welcoming, to actions involving the self in relation to this gaze either shrinking and self-occluding or increasing exposure. By contrast, in

Table 2. Parallels in the development of affective self-consciousness

	Embarrassment-like displays: hiding the self	Pride-like displays: exposing the self
2–4 months	Coy smiles at onset of attention from self or familiar others (with smiling gaze aversion and curving arm movements)	Calling others to engagement with loud squeals Games inviting mutual attention followed by turning away
7–12 months	Coy or watchful refusals to 'perform' on request Coy looks, alternation of smiling and gaze aversion and wariness to greetings from strangers	Showing-off through silly, exaggerated, or vigorous actions to retain or attract attention Repetition of 'clever' acts for re-eliciting others' appreciation Games involving hiding and revealing the self
18 months	Coyness and embarrassment at being observed and overcomplimented (with smiling gaze aversion and face touching)	Preening, admiring self in mirror, 'cute' looks Games involving hide and seek and surprising actions
36 months	Displays of embarrassment or shame in response to others' evaluation, actual or anticipated Extended coy smiles involving lengthier expressions	Displays of pride in response to others' evaluation, actual or anticipated

second-order emotion experience, these emotions are experienced with a more reflexive tone and focus on the evaluation of self. Differences in the patterns of coy displays between the first year and the second year of infancy (e.g. curving arm movements in the coy displays at 2 months are much less controlled than the discreet face touching movements of the embarrassed 18-month-old) suggest that the older infants reveal a greater focus on the self and the younger ones reveal a more immersed, less detached focus on the other. Regardless of age, self–other conscious affects involve an awareness of both self and other, albeit in different ways.

Some objections and counterarguments

There could be alternative explanations of these phenomena that pose objections to the explanation offered here. One such could be that the earlier behaviours are akin to fixed action patterns, merely hard-wired into the organism to create the appearance of emotionality to elicit caregiving responses in adults. Another could be that behaviours of the very young infant might look like those of the toddler but be governed by very different processes and in no way need be interpreted as indicating a consciousness of self or other. Yet another could be that the very young infant might be showing ‘emotional reactions’ that are none the less not experienced as feelings [39] or that he or she is not metacognitively aware of having. All of these objections, however, adopt one central argument: that the similarity between early and late affective self-conscious behaviours is indeed spurious. Certainly this is one possibility. However, the main reason for the strength of the belief that these similarities and continuities are misleading appears to be that current theory dictates that this must be so (see also [40]).

The variety of infant responses to the onset of others’ attention in the first 2 months of human infancy (positive, negative, indifferent, ambivalent), the development throughout the first year from responding to directing it to various objects, the variety of contexts in which these infant actions are elicited and the variability within and between individuals in the form, frequency and eliciting contexts of the behaviours, all suggest that a simple hard-wiring or stimulus–response explanation is inadequate. Furthermore, for a child to respond appropriately to receiving another’s attention, and indeed to initiate actions to seek it, the child must be aware both of the other’s attention and of its directedness to the self, even though he or she is not aware of being aware of these things. Alternative models of consciousness of emotion experience suggest that emotion experience includes both that experience of which we are explicitly aware and that of which we are not [37]. Consciousness itself might be of two kinds: affective and cognitive, involving differences in modes of awareness [41] rather than an absence of awareness in the former.

A second-person approach to awareness of self and other

Contradictions in evaluating the significance of infant emotional reactions to others’ attention and confusion in theoretical models of developing self-awareness and other-awareness might be reduced by the adoption of a

second-person (i.e. an I–you rather than I–she/he) perspective [42]. The apparent mystery of how infants bridge the gap between first-person experience (I see, feel or think) and third-person observation (she/he does) is no longer a mystery if one posits second-person engagement (I-feel in relation to you-do) as the bridge. Similarly, the gap between first-person tactile–kinaesthetic experience of the self and third-person inference of the self as an object can also be bridged by acknowledging second-person relations in which the self is emotionally aware of being an object to others before it is an object to itself. Anchoring the observation of the visual self in a previously experienced bodily self avoids a conception of the self in a sentient vacuum, seen from a third-person orientation but not experienced in the first-person [43]. Similarly, anchoring the perception of the directedness of others’ attention in the self (instead of leaving it to be observed only from a distance in relation to external objects in a third-person orientation to gaze) allows it to be grounded in second-person relations. Acknowledging second-person awareness of self and other (in addition to third-person information processing) allows us to connect the rich tradition of infant interpersonal interaction with representational explanations of child self-consciousness and theory of mind.

Conclusion

I have argued that infants are aware of the directedness of others’ attention before evidence of joint attention. The self is experienced as the first object of this directedness. The perception of attention in others could begin with, and be shaped by, the experience of being an object of attention to others. I argue that developments in awareness of attention during the first 2 years can be explained in terms of an expanding awareness of the objects of attention. This view can explain early affective self-conscious reactions to attention and continuities in their development, which would otherwise have to be dismissed as insignificant phenomena bearing only a spurious similarity to later affective self-conscious reactions. A second-person approach to self-and-other awareness is suggested as an embodied bridge across the alleged gap between first-person experience and third-person observation. Future research needs to shake free of theoretical dogma and take similarities between earlier and later affective phenomena seriously. This can only be done if we engage with infants ourselves.

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