

# *From Intersubjectivity to Subjectivity: The Transformative Roles of Emotional Intimacy and Imitation*

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How is the transition between intersubjectivity and subjectivity accomplished? While many developmental theorists have argued that social interaction gives rise to individualistic capacities (e.g. representation, language, consciousness), relatively few theorists have attempted to identify the precise mechanisms that might be responsible for this transformation. The present paper addresses this gap by drawing attention to the central role played by emotional intimacy. It is argued that subjectivity arises out of intimate engagement with others, and particular attention is given to the role of imitation in fostering such intimacy. While the primary focus is on infant development, links are made to work with atypical populations because they offer valuable insights into the developmental processes under consideration here. The ultimate aim of the paper is to demonstrate that by recognizing the emotional intimacy inherent within adult–infant interactions, new solutions are offered to theoretical problems that developmental psychology continues to face in accounting for the origins of subjectivity. Copyright © 2006 John Wiley & Sons, Ltd.

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## INTRODUCTION

How is the transition between intersubjectivity and subjectivity accomplished? This is a problem that has exercised both classic and contemporary developmental theorists (e.g. Baldwin, Vygotsky, Meltzoff, Reddy, Stern, Trevarthen). While many have argued that individualistic capacities, such as self-awareness, representation, language, and consciousness, arise out of social interaction, relatively few theorists have attempted to identify the precise mechanisms that might be responsible for this transition. The present paper addresses this theoretical gap, drawing attention to the central role played by emotional intimacy.

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I argue that it is only through such intimate engagement with others that individualistic capacities can arise, and I wish to highlight the role of imitation in fostering emotional intimacy. The paper will be structured around three sequential claims: (a) adult–infant interactions are intimate; (b) emotional intimacy is transformative; and (c) imitation is a particularly powerful means of facilitating intimacy. This account prompts reflection on limitations in the way in which developmental psychology currently conceptualizes imitation and also on its continuing reluctance to engage with the emotional substance of human interaction. While my primary focus is on infant development, I draw on work with atypical populations because they offer valuable insights into these processes. The ultimate aim of the paper is to demonstrate that by recognizing the emotional intimacy inherent within adult–infant interactions, new solutions are offered to theoretical problems that developmental psychology continues to face in accounting for the origins of subjectivity.

### ADULTS' INTERACTIONS WITH INFANTS ARE INTIMATE

To begin an academic paper with the statement that 'interactions between adults and infants are intimate' can seem a radical act. Intimacy is often reserved for the domain of (consenting) adulthood. For example, the three definitions of 'intimacy' given by the Concise Oxford Dictionary (1995: 714) refer to (a) 'close familiarity or friendship', (b) 'a private cosy atmosphere', and (c) 'an intimate act, especially sexual intercourse'. While the first definition might readily be applied to adult–infant interactions, the last one certainly would not. Because the three senses overlap, using the term 'intimacy' in relation to babies risks impropriety.

However, adult–infant interactions, especially those with mothers,<sup>1</sup> are undeniably intimate. Mothers and infants engage in intense periods of face-to-face, reciprocal exchange (e.g. Beebe, Jaffe, Feldstein, Mays, & Alson, 1985; Stern, 1985; Trevarthen, 1978, 1979). These are orchestrated via a corporal choir of visual, auditory, tactile, and kinetic modalities. Exchanges follow a reliable pattern of ascending and then descending levels of pleasure, in which the building excitement reaches an interim climax that is followed by a brief period of repose, during which time each partner can regain control over their arousal level. This establishes a renewed level of physiological stability that enables each to embark on another round of rising excitement. Breathing rates and vocal pitch fluctuate in accordance with the flow of the interaction. There is a predictable rhythm to the dyad's turn-taking, enabling each partner to anticipate the actions of the other. Such predictability provides the opportunity for the two partners to play with that rhythm, to experiment and 'muck about' with its beat,<sup>2</sup> thus bringing an element of surprise to the interaction that heightens both the tenor of the anticipation and the attention of the other. Mother–infant interaction not intimate? On the contrary, the image painted above is brimming with intimacy, of both a physiological and emotional character.

Such exchanges, revealed via three decades of microanalyses of mother–infant interactions, have often been likened to a dance, in which the two partners intuitively read and anticipate the rhythmic movements of one another (Stern, 1977; Trevarthen, 1979). The analogy of an orchestra has also been employed, to highlight the multiple channels through which communication occurs and to draw particular contrasts with the traditional telegraphist model that sees communication as a simple transfer of information from sender to receiver (Reddy, 1996). Most recently, parent–infant interactions have been likened to a jazz duet, given

that the two partners are not dancing to someone else's tune but are creating one of their own. As in the jam sessions of musicians, the tune emerges spontaneously—entirely impromptu, unique, and yet fully harmonious and rhythmic—imbued with jazz's signature beat of unpredictability within predictability (Schogler, 1998).

When such analogies are employed to highlight the intersubjectivity of mother–infant interactions, they inevitably point to the intimacy of such exchanges. The intense focus on the other, and the complementarity of the partners' actions, is the embodiment of intimacy. Recognizing the inexorable link between intersubjectivity and intimacy is important, given that critics have raised doubts about an intersubjective reading of adult–infant interactions. Kaye (1982), Newson (1979), Schaffer (1984), and Kessen (1993) are among those who adopt a cautious position, asking whether psychologists who endorse an intersubjective view are not ascribing an excessive amount of agency to the infant. They argue that young infants are not really active communicative partners, although it is understandable how an observer (including the mother) might form the impression that they were. The mother's social skills are so finely honed by human evolution and through a shared history with her baby that she can make it appear quite convincingly 'as if' the infant were engaging spontaneously and communicatively with her. Trevarthen's (1979: 347) response to such a sceptical account is sardonic in its tone: 'The infant invites [the mother] to share a dance of expressions and excitements. The infant needs a partner but knows the principle of the dance well enough, and is not just a puppet to be animated by a miming mother who 'pretends' her baby knows better.' (For extended comparisons of these and other theoretical positions, see Beebe, Sorter, Rustin, & Knoblauch, 2003; Zeedyk, 1996.) For those who advocate an intersubjective account, the agility with which infants anticipate and respond to the subtleties of their mother's behaviours offers a palpable demonstration of the infant's agency.

Interestingly, developmental theory advocates such intimacy, despite its avoidance of such a label. Intense emotional engagement between mothers and infants is regarded as the best foundation for later development. 'Sensitive mothering, evidencing appropriate responsiveness to infant cues... is *the* influential dimension of mothering in infancy: it not only fosters healthy psychological functioning during this developmental epoch, but it also lays the foundation on which future experience will build' (Belsky, 1981: 8, emphasis in original). Terms such as 'normal', 'healthy', 'successful', and 'appropriate' are regularly used to describe such engagement, and the adverse developmental consequences suffered by children who fail to receive this kind of early attention is emphasized.

'Infant cognitive outcome at 18 months was predicted [in this study] by the quality of early interactions, maternal insensitivity and remoteness being associated with poorer outcomes' (Murray, Fiori-Cowley, Hooper, & Cooper, 1996: 2520).

'Mothers who monitor frequently are likely to notice more signals, to notice and respond to signals sooner, and to catch subtle signals more often than do mothers who monitor infrequently' (Raval *et al.*, 2001: 299).

'Infants who had mothers who ranked high on maintaining attention, warm sensitivity, and social responsiveness appear to reflect back this maternal affect because they smiled, cooed, and gazed more at their mothers than infants whose mothers ranked low on these behaviours' (Legerstee and Varghese, 2001: 1310).

Thus, the intimacy inherent within mother–infant interactions is prized and encouraged by developmental theorists, despite a preference for related terms such

as 'affective sharing', 'synchrony', 'attunement', 'mutual sympathy', and 'emotional matching'.

There are spheres in which the intimate nature of mother–infant interactions is more overtly broached. Child care manuals are a good example. Contemporary childcare advice typically describes the early mother–infant relationship as a process of 'falling in love'. This is regarded as the natural and desirable course of events, with mothers who 'fail' to pursue or achieve this state subtly positioned as inadequate mothers.

Getting to know your new baby is part of a fascinating but relatively simple process called bonding, in which you essentially 'fall in love' with each other. (Lucille Packard Children's Hospital, 2004)

Bonding is the process through which you and your baby 'fall in love' with each other, and become so finely attuned to each other that you are, at times, 'as one'. As you become more and more entranced with your baby, you provide the kind of close, loving care your baby needs. (University of Utah Health Sciences Center, 2004)

Don't be surprised if you don't have the burst of maternal feelings towards your baby which everyone has led you to expect. It takes time to fall in love with your baby. (Jolly, 1986: 46)

The terms used in these extracts are explicitly designed to evoke images of reciprocal intimacy. Mothers can be reassured when they experience such emotional closeness—and conversely, they should worry if they do not. 'While most women adapt *well* to motherhood, a small number, through no fault of their own, suffer from postnatal depression. . . Medical help should always be sought for this condition' (National Childbirth Trust, 1987: 242, emphasis added).

Mothers themselves are aware of, and willing to articulate, the sense of falling in love that they experience with their infant.

This love (for my son) wasn't a type of love with which I was acquainted. This was love on a cellular, biological level. Intimacy, I began to understand, is rooted in the corporal. It has to do with the distance between bodies. None separated me from my son's. . . This wasn't the romantic intimacy between adults, but an earthbound, often tedious kind which is undertaken, no questions asked. (Israeloff, 1985: 108)

I know she's going to start talking soon, and I'm looking forward to that. But at the same time, that will be a little bit hard for me. Because then she and I won't be in this bubble, alone together, where it is just her and me. Nobody else is really able to come into our world just now. That sounds daft, doesn't it? (Mother from one of my own interview studies, unpublished)

Mothers thus recognize and acknowledge the intimacy that is associated with caring for and engaging with their infant. Indeed, it would be impossible for them to avoid such awareness, given the childcare advice and other cultural forces that exist to usher them (and sometimes even force them)<sup>3</sup> toward it.

The reluctance exhibited by developmental psychology for engaging theoretically with intimacy can be attributed to a variety of sources, including a historical focus on the infant's (individualistic) cognitive skills, unease about the conceptualization and measurement of emotionality, separation of the empirical and psychoanalytic traditions, and perhaps even a more recently emerging discomfort that characterizing relations with infants as intimate risks associations with paedophilia. Certainly, psychology has, since embarking on its search to make sense of the human mind more than a century ago, been largely committed

to a stance that prioritizes detachment over engagement (Reddy & Morris, 2004). That position has helped to shape developmental psychology's predilection for overlooking or recasting the intimacy of parent–infant interactions. The aim of this paper is to demonstrate the theoretical and empirical value that stands to be gained from recovering that lost recognition.

It is interesting to realize how the study of adults with impaired communicative skills can help in achieving such recognition. Social interactions between such individuals and their carers (or others) can reveal a high level of intimacy. For example, Caldwell (2002, 2006) has charted on videotape the growth, over a period of two days, of her relationship with Gabriel, an adult man with autism that was so severe that his support staff could not make psychological contact with him. Initially, there is extreme emotional and physical distance between them, but their communicative exchanges ultimately culminate in a prolonged face-to-face episode, in which their foreheads are closely inclined and both are smiling and gazing delightedly into one another's eyes. This resembles the process of mother–infant exchanges, as well as the mutual posture of two adults who are in love with one another. Another example is presented by Hart's videotape of himself working with Fiona, an adult woman who is deaf and blind (Hart & Noble, 2002). The reciprocal, turn-taking exchanges characteristic of mother–infant interaction are readily observed in their interaction, until the touching (which is the modality in which the exchange is being accomplished) progresses to her stomach. This lends a problematic aspect to the interaction, because within British culture, touching another person's stomach is considered extremely personal and, in the case of dual gender relations, has possible sexual connotations. Hart therefore resists continuing the exchange in this region of Fiona's body, and that resistance leads to a break down in communication. The ensuing pattern echoes the pattern observed in mother–infant interactions: Fiona makes a further bid for Hart to tap her stomach, and when he fails to 'take his turn', she literally turns away, taking up a foetal position that closes off both her body and her attention from him. The extremity of this reaction resonates with that shown by infants in the still-face paradigm (Adamson & Frick, 2003); when mothers do not respond to their infant's bid, infants withdraw by turning their face, and eventually head and trunk, away from the maternal partner. All opportunity for engagement within the dyad is shut off. These two examples, one illustrating the 'successful' achievement of communication and the other illustrating the 'break down' of communication, expose the intimacy that potentially resides in all human communicative exchanges.

Significantly, it may be the atypicality of these adult–adult interactions that allows their intimacy to be so visible. 'Normal' adult interactions usually constrain such intensity. Societal restrictions mean that we do not usually publicly observe adults in emotionally intense, embodied, other-focused exchanges—except when two adults are so caught up in the throes of love that they overthrow societal convention. Displays of intense adult affection are usually regarded as private. When they do occur in public, observers are likely to feel embarrassed or even disapproving, and to divert their gaze in order to avoid infringing societal norms. The emotion of embarrassment thus provides mutual dignity, protecting the composure of the observer as well as the privacy of the observed.<sup>4</sup> This preference for keeping such exchanges private, for concealing them beyond public gaze, is captured in the dictionary definitions of 'intimacy' cited earlier (e.g. 'a private, cosy atmosphere'). Atypical adult–adult interactions can permit us—indeed confront us with—the kind of open display of adult human intimacy that is usually prohibited.

In contrast, the emotional intimacy between mother and infant is open to the public gaze. No societal bar exists (at least in Western society) on watching a mother and infant engage intensely with one another. Observers are not required to divert their gaze from such a display; indeed, it is regarded as a spectacle of good mothering. The intimacy of adult–infant interactions is freely available to the scrutiny of the passer-by—and the psychologist. It is ironic, therefore, that that emotional intimacy goes so often unacknowledged, especially by science. Perhaps one reason that the term ‘intimate’ is not often applied to mother–infant interactions is precisely because society does not proscribe for them the same public–private boundaries that are applied to adult interactions<sup>5</sup>—and which atypical adult interactions (sometimes) breach. Yet, as the analysis so far has shown, mother–infant interactions can, empirically and logically, be classified as intimate. I would argue that recognizing them as such has the potential to help us understand in new ways why these early interactions are quite so central to infants’ development.

## INTIMACY IS TRANSFORMATIVE

Having drawn attention to the intimacy of mother–infant interactions, I now wish to argue that that intimacy is transformative. It is from emotional intimacy with another person that individualistic capacities derive, including self-awareness, representation, language, and even consciousness. This argument is in line with the proposals of other theorists, but it extends and sharpens their accounts. I am suggesting that it is the *emotional intimacy* of interactions that is central to the development of individual experience, rather than the interaction *per se*. Subjectivity is born from the intimacy of intersubjectivity. This argument provides a more nuanced and precise mechanism for facilitating psychological development than is yielded by more generalist accounts.

So what accounts have other theorists provided? Baldwin (1906) provides an archetypal account of social interaction giving rise to individual growth:

My sense of self grows by imitation of you, and my sense of yourself grows in terms of my sense of myself. Self and other are thus essentially social. Each is a socius and each is an imitative creation. (Baldwin, 1906: 15)

Other classic theorists who echo this view include Macmurray, Vygotsky, and Mead.

Human life, even in its most individual elements, is a common life; and human behaviour carries always, in its inherent structure, a reference to the personal Other. ...The unit of personal existence is not the individual, but two persons in personal relation. (Macmurray, 1961: 61)

Egocentric speech is a phenomenon of the transition from interpsychic to intrapsychic functioning, i.e. from the social, collective activity of the child to his more individualized activity—a pattern of development common to all the higher psychological functions. (Vygotsky, 1934/1986: 228)

When a self does appear, it always involves an experience of another; there could not be an experience of a self simply by itself. ...When a self does appear in experience it appears over against the other. ...in the cooperative activity which arouses in the individual himself the same response it arouses in the other. (Mead, 1934: 195).

Contemporary developmental theorists also support this model, such as Stern (1985), Ayers (2003), Hobson (2002), Braten (2003), and Reddy (1996), among others.

The infant's life is so thoroughly social that most of the things the infant does, feels, and perceives occur in different kinds of relationships. . . The notion of self-with-other as a subjective reality is thus almost pervasive. (Stern, 1985: 118)

Seeing oneself reflected in another's eye is to know one's self, and to exist. (Ayers, 2003: 68)

The fact that we become able to [think] abstractly, all by ourselves, does not mean that it was all by ourselves that we acquired the ability to think in the first place. . . On the contrary, the tools of thought are constructed on the basis of an infant's emotional engagement with other people. (Hobson, 2002: xiv)

All of these theorists place the foundations of individual growth within the 'cradle' (to use Hobson's (2002) term) of social and emotional interactions with others. However, it is difficult to explain precisely how such transformation, from the dyadic to the individualistic plane, could be accomplished. Indeed, one of the primary critiques made of Vygotsky's account of the intermental to intramental shift is that it is not clear how such a shift transpires. '[T]he exact psychological processes involved in internalization of the intermental to the intramental or appropriation of a shared activity remain unclear' (Miller, 1993: 413). I am suggesting here that it is the intimate nature of adult-infant social interactions that constitutes one key aspect of that mechanism.

How might that transition operate? Asking this enduring question leads one to ask a set of related questions: What is it that keeps each of two partners engaged with one another during a communicative exchange? What is it about the other that is so compelling? What is it within an exchange that gives rise to the kind of intense, exclusive focus required for intimacy? I would argue that some answers lie in understanding the interconnected nature of two key components of communicative exchanges: being the object of the other's attention and anticipating the other's next action.

The first component involves being the object of another person's attention. It is arousing to have someone's gaze directed toward you. A large body of research has now revealed the physiological responses to such circumstances (e.g. Adamson & Frick, 2003; Gable & Isabella, 1992; Sroufe, 1995). But the experience has more than immediate physiological consequences; in the longer-term, it may be central to the development of self-consciousness. This is Reddy's (2003) argument. She contends that infants begin to experience themselves as 'selves' because they are the target of another's attention. This bodily experience of self leads to the development of more complex forms of self-awareness (and other-awareness as well). Reddy's argument is a novel one, for the second-person account (I-you relation) that she advances differs fundamentally from the third-person account (I-he/she relation) more commonly found in the developmental literature (e.g. Flavell, 1999; Meltzoff & Moore, 1995; Perner, 1991; Tomasello, 1999), in which the infant uses his/her experience of self as an 'analogy' for making sense of, and thus contact with, others. While Reddy's account charts a series of transitions in the development of self-awareness and other human capacities (i.e. infants' attention as directed first to aspects of self, then objects, then objects in time, then representations), the particular significance of her model for the present argument is the central role it accords to the gaze of the other in explaining the development of self-consciousness. Subjective consciousness is inherently, organically, and ontologically intersubjective. I literally come to know myself—come to exist as the self that is myself—through your eyes. 'The infant

knows the 'me' experientially as a self who can be attended to by others' (Reddy, 2003: 400).

Technically, Reddy's account disentangles gaze and attention. While infants will usually first experience and perceive attention within another's gaze, the two are not interchangeable. Attention could be experienced by the infant, and demonstrated by the parent, via other modalities and actions (e.g. touching, imitation), as long as the infant-directed nature of the attention is discernible to the infant. Attention from this perspective is an embodied, phenomenological experience, rather than an internalized, mental process (which is the more common conception of attention within contemporary psychological literature). This conception—attention as an embodied experience—holds important implications not only for understanding infant development, but also for theorizing self-consciousness in individuals whose communicative capacities are impaired, for example, by deafblindness (Hart, 2006), learning disability (Caldwell, 2006), dementia (Astell & Ellis, 2006), autism (Heimann, Laberg, & Nordoen, 2006), and schizophrenia (Gallese, 2003). The key to establishing, expanding, or maintaining the self-awareness of these individuals may be to ensure that, like infants, they first (re-)experience themselves as the undoubted object of another person's attention.

But what is compelling enough about another to induce sustained exchanges between two people, particularly those that result in the kind of intimate, focused interactions I have been describing thus far? This consideration brings us to a second key component of communicative exchanges: anticipation of the other's actions. In any conversation or communicative interaction, one can reasonably expect to receive a reply from the other, although the precise nature of that reply will be unknown. Indeed, this lack of precise fore-knowledge is central to sustaining the engagement. If you know precisely what your partner is going to do or say next, then habituation begins and your interest starts to seep away. Boredom ensues. But if you are confident that your partner is going to do something unexpected, you give her or him your attention because you do not want to miss that something. Such anticipatory interest is, according to Trevarthen (1978, 2001), biologically based. He argues that infants come into the world endowed evolutionarily with a biological system that is tuned to the rhythms of intersubjectivity. That is, infants 'naturally' look for and anticipate responses from other people; their expectation of reciprocity is a biological, neurophysiological one. However, the details of any particular response are necessarily unknown; that only becomes clear as the other offers his/her response. (And the dyadic nature of interaction means that that response is not fore-known to the other, either, but depends on what the partner has him/herself offered for the other to respond to. Such is the intersubjective nature of communicative exchanges.)

In short, interactions are full of surprises. I must keep my attention focused on my partner if I want to be sure to catch the next one. Other theorists who have highlighted the importance of surprise include Stern (1985), who points out the extent to which game playing between mothers and infants is dependent on an element of surprise (which he terms 'suspense'). Even in repetitive games (e.g. tickling baby's tummy), the mother adds a novel twist to each of her turns, such as using a higher pitch or delaying the final moment of contact. Ephraim (1979) and Caldwell (2004, 2006) discuss the effectiveness of surprise in working with adults with severe communicative impairments. They argue that introducing an unexpected element into the interaction is vital for obtaining and then maintaining their attention (once trust and familiarity has been established within the dyad). Even those theorists who have not sought to theorize explicitly about the

importance of surprise have often offered data to support this premise. Meltzoff and Moore (1992, 1994), for example, have shown in their work with young infants that a burst-pause pattern in adult communicative behaviours (e.g. tongue protrusion) is more effective in generating an imitative response from infants than is a static and predictable display. A burst-pause pattern harbours within it surprise, while a static pattern presents no such opportunity. And Nagy and Molnar (2004: 47) have demonstrated that neonates less than 3-days old will go as far as to 'provoke' adults to engage with them, if they have already experienced 'irregular' response patterns (i.e. ones that contains an element of surprise) with those adults.

Overall, then, an element of surprise is essential to successful communicative exchanges. But I would argue that it is the *anticipation* of that surprise, monitoring for the impending but unpredictable reply, which is key to sustaining one person's interest in another. A response that merely mirrors one's actions, or that is entirely disconnected from one's actions, will not do. Something more, and yet something related—a meaningful surprise—needs to be present for interaction to be maintained. Such a pattern is not only psychologically exciting, but also physiologically arousing. In their work with neonates, Nagy and Molnar (2004) found that heart rate changes as a function of whether infants are responding to or attempting to provoke action from an adult. When they were responding to an imitative act, their heart rate accelerated, while the role of provocateur produced a deceleration in heart rate. There is every reason to expect that anticipation is similarly associated with a particular heart rate pattern, as well as with other physiological features, such as muscle tension and breathing patterns. Such perspectives assist in conceiving of anticipation, like attention, as an embodied experience. Appreciating the corporal nature of interpersonal engagement is essential to answering questions about the transition from intersubjectivity to subjectivity.

In summary, then, the first component (being the object of attention) is self-oriented, and the second (anticipation) is other-oriented. The two components are separable, but they necessarily function dyadically, reciprocally, cyclically. One of the reasons your partner focuses intently upon you is because they are interested in the unexpected thing that they know you will do next; you thereby experience yourself as the target of their gaze. The orientations are then exchanged, and you take up the position of anticipating your partner's next action, leaving them exposed to your gaze. This rhythmic, spontaneous process of switching roles (Nadel, 2002) lasts as long as the turn-taking sequence continues. And within that intense exchange, where both partners actively monitor and also sit exposed, intimacy has the potential of materializing. This helps in understanding why intimacy is bound up with the sense of 'being in love', whether exemplified in the interactions of mothers and infants, or adults with impairments and their carers, or two consenting adults. The focus on the other is concentrated, reciprocal, and absolute. Such an exclusive focus is possible because there is not (yet) any *content* to distract the attention of the other away from one's self. The *process* of engagement is sufficient, indeed exhilarating, on its own. To fall in love is to desire nothing more than the gaze of the other. To be able to trust that they, too, wish to drink in your gaze is to know the luxury of reciprocated love.

Reddy (2003) has argued that the essential element for development of infants' self-consciousness is their experiential realization that the attention of other people can be directed, that attention is a directed phenomenon. And this realization can only occur because the infant first experiences that attention as directed toward him/herself. Perhaps emotional intimacy is a transformative element in

the path from intersubjectivity to subjectivity because the intensity of intimacy impels that realization. The infant, or adult with impairments, or the lover, once engaged in intimate exchanges with another, 'cannot help but' perceive that the attention of that other is indeed directed to him/her. It is made obvious by the focused, exclusive intensity of intimacy. Once this directedness is confidently and reliably experienced, it becomes possible to begin to bring content, in the form of objects and external topics, into the interactions. The exchanges become richer, more complex, more varied, and interlaced with shared historical memories. But in the process of diverting the focus from the other and coordinating attention to a continual variety of topics, the intense intimacy inevitably dwindles. The two partners are no longer the sole focus of each other's attentions. They have an endless array of things they could now talk about, think about, and do. New worlds beckon. But to reach those horizons, the cloisters of intimacy must be left behind. This is as true for mothers and their babes as it is for lovers. The poet Lindbergh (1961: 65) captures the sense of loss that accompanies those gains when she observes, 'The simplicity of first love, the mutuality of first sympathy seems, at its initial appearance...to be a self-enclosed world. Two people listening to each other, making one world between them. There are no others in the perfect unity of that instant, no other people or things or interests. ...And then how swiftly, how inevitably the perfect unity is invaded; the relationship changes; it becomes complicated, encumbered by its contact with the world.'

What evidence might be offered to support my argument concerning the transformational potential of intimacy, given its tentative status? One possible source is offered by the longitudinal study of social interactions of individuals with severe communicative impairments. Therapeutic work with such adults and children has revealed the striking and long-lasting outcomes that can follow after they have been able to experience high levels of intimacy with other people (e.g. Caldwell, 2002; Ephraim, 1979; Hart & Noble, 2002; Janssen, Riksen-Walraven, & van Dijk, 2003; Nind & Hewett, 1994). Such outcomes include extreme decreases in aggressive behaviour, the development of language skills, the emergence of motoric ability (e.g. crawling), reduction in medication, and solicitation of social attention and affection. Practitioners report that such changes are remarkably easy and swift to achieve, often within only a few hours or even minutes of intimate interpersonal engagement, and often in stark contrast to the predictions of regular carers. 'I am often astonished at how relatively easy it is to obtain and maintain a person's interest, even when they have shown no previous inclination to make connections' (Caldwell, 2003: 1). Research with individuals with communicative challenges may be able to offer particularly valuable insights into the developmental outcomes of emotional intimacy because the processes leading to longer-term transformative change in this population seem to be able to operate perceptibly and rapidly (when effective interventions are applied), whereas in infants such transformations are more gradual and nuanced, rendering it more difficult to track them in empirical studies.

A second possible source of evidence regarding the potential of intimacy is the physiological literature. This might well be characterized as studying the 'chemistry of love'.<sup>6</sup> Ultimately, psychological shifts of the dramatic, fundamental nature being explored here will be embedded in, and sustained by, physiological shifts. That is, they will be embodied. A large volume of findings now exists to reveal the physiological factors that underlie emotional and social experience (for reviews, see Gerhardt, 2004; Panksepp, 2003; Schore, 1996, 2001). An account of the hormone oxytocin can provide a useful illustration of this link (for reviews, see Beech & Mitchell, 2005; Carter, 1998, 2003). It is likely that intense moments of

social interaction (what I am classifying as moments of intimacy) carry with them a release of this neuropeptide. Oxytocin has traditionally been regarded as the 'female reproductive hormone', due to its association with reproductive processes such as childbirth and lactation. The fact that it has been assigned particular importance in shaping maternal breastfeeding practices hints at the extent to which it may be implicated in mothers and infants 'falling in love' with one another. Additionally, oxytocin has also been linked, more recently, with stress regulation and social behaviours, in both human and animal species (Carter, 1998, 2003). Research has now shown that its release generates a reduction in stress responses such as anxiety, obsessiveness, and reactivity. In rodents, social behaviours including aggression, social bonding, touching, and sexual selection have been shown to be influenced by levels of oxytocin, and its uptake during the postnatal period appears to have long-term consequences for adult characteristics such as parenting behaviours, pair bonding, and stress responses. Moreover, recent research on the causes of autism has suggested that some forms of autism are also associated with low levels of oxytocin (Modahl *et al.*, 1998). At least one intervention study has demonstrated that the introduction of synthetic oxytocin into the bloodstream can be effective in reducing stress-related repetitive behaviours typically associated with autism, such as self-injury, touching, and demandingness (Hollander *et al.*, 2003). Such findings support my hypothesis that even limited experience of intimate social interaction, with its accompanying oxytocin release, might serve long-lasting transformational outcomes. Conceiving of intimacy as grounded within physiological, embodied processes helps to explain how intersubjective exchanges between two persons could indeed facilitate the subjective experience of individual persons.

In conclusion, if emotional intimacy (as contrasted with interaction *per se*) with another person plays the central role in development that I have ascribed to it, then, as psychologists, we will need to refine our theoretical explanations if we are to account more fully for the development of the phenomena that interest us, such as intersubjectivity, cognition, and consciousness. Previous accounts have struggled to determine by what precise means interaction should have such significant impacts on human development, and the present proposal offers one answer.

## IMITATION IS A PARTICULARLY POWERFUL MEANS OF FACILITATING INTIMACY

What role might imitation play in the transformative process I have described? This question represents the final stage in my argument. I wish to suggest that imitation constitutes a particularly powerful means of creating emotional intimacy. This is due to the fact that, of all the features of communicative exchanges (e.g. turn-taking, reciprocity, contingency), imitation provides the closest correspondence between self and other. This high degree of similarity (whether in facial expression, posture, pitch, rhythm, or any other quality) serves to accelerate and exacerbate the intimacy between two partners.

Many theorists have speculated on the possible functions of early imitation (for reviews, see Kugiumutzakis, 1993; Nadel, Revel, Andry, & Gaussier, 2004). While some early theorists argued that it does not differ from other types of circular reactions (e.g. Piaget, 1962; Jacobson, 1979), most theorists now see imitation as having some communicative function. Some see it as providing a bridge from self to other, a mechanism that enables (autonomous) infants to make sense of and

influence the behaviour of other (autonomous) people. 'Imitation is to understanding people as physical manipulation is to understanding things' (Meltzoff & Moore, 1994: 96). Others see early imitation as a form of interpersonal matching, which forms a basis for later communicative abilities, but which in its initial forms is not (yet) intentional on the part of the infant. 'Mothers shape infants' vocal behaviour long before the infant may be able to imitate' (Papousek & Papousek, 1989: 150). The present theoretical proposal sees early imitation as an inherently intersubjective phenomenon, in which both infant and adult are actively engaging in an emotionally endowed, communicative exchange. This account is in keeping with the views of theorists such as Trevarthen (1978), Stern (1985), and Kugiumutzakis (1993). It contrasts with the other types of accounts, in that imitation is not conceived as a special mechanism that makes communication between two subjects possible (either at birth or later in development). No such mechanism is needed, because the capacity for interpersonal engagement (i.e. second person, I-you relations) with which the baby begins life means that he is already able, from birth, to reach the other. Imitation thus becomes a *form* of communication, one of the variety of ways in which infant and adult can engage emotionally and psychologically with each another. 'In imitation...[t]he other's dynamic personal presence, emotions, and motivation are directly felt in presentational immediacy' (Kugiumutzakis, 1998: 79).

How might imitation serve to facilitate intimacy between two partners? Some theorists (e.g. Lacan, 1997) have suggested that imitation might bring about such close correspondence within a dyad that it causes the distinction between self and other to collapse, resulting perhaps in a state of amorphous selflessness. However, I wish to argue the converse: that imitation helps to *create* boundaries between self and other. When two epistemic subjects (whether adults or infants) enter into engagement, the psychological boundaries between them will need to be negotiated. The boundaries can have no substance—no shape or site or strength—until 'agreement' about those qualities has been enacted by the dyad. It is within interaction, via the matching and mismatching of various communicative features, that two individuals learn which aspects of experience can and cannot be shared between them. Such negotiation is the essence of intersubjective engagement. It is within the embodied process of interpersonal bartering that boundaries are constructed, and that trust (of self and other, and then later of other others in the world) is—or is not—manufactured.<sup>7</sup>

The contribution that imitation makes to this process of boundary building is that it enhances, and even initiates, curiosity about the other. That is, it orients attention away from self and toward the other. Critically, it is only with orientation to the other that interpersonal engagement can occur. If one is entirely self-focused, then engagement is impossible. Thus, my argument is that imitation has the capacity to accelerate or intensify engagement and boundary negotiation—and hence, intimacy.

Why should imitation generate an orientation to the other? The answer to this query arises out of the human aptitude for detecting close affinities, or correspondences, between the actions of self and the other. A number of theorists now agree that such an aptitude exists, although they explain it in rather different ways. Meltzoff and Moore (1995), for example, have suggested that infants are endowed with a cognitive-perceptual system that leads them to use the same mental code to represent the movement patterns of their own and others' bodies. They describe this as an 'active intermodal mapping' system (AIM). In contrast, Rizzolatti's (Rizzolatti, Camarda, Gallese, & Fogassi, 1995; Rizzolatti & Arbib, 1998) ground breaking work on mirror neurons has led him and others

(e.g. Gallese & Goldman, 1998; Wolf, Gales, Shane, & Shane, 2001) to argue that correspondences are detected at the neural level. Their work (with monkeys) has shown that, regardless of whether one is performing an action one's self or is watching another individual perform that action, the same neuron is activated in the brain. Rizzolatti and Arbib (1998) label this an 'action-recognition mechanism', and locate the neuron, in monkeys, in the premotor ventral cortex, which is assumed to be homologous to Broca's area in the human brain (which is associated with speech production). Critically, both Meltzoff and Moore's and Rizzolatti's accounts emphasize the perceptual system (i.e. vision). The account of a third theorist, Caldwell (2002, 2004, 2006) encompasses a wider range of modalities (e.g. tactile, auditory, kinaesthetic), and she assigns the capacity for detecting similarities to the neurochemistry of the brain. She argues that, when one is imitated by another person, the brain identifies that act (e.g. a rhythm, a caress on a particular place on the body, a particular style of movement) as a physiologically familiar experience or sensation, assisted by the release of neurotransmitters and hormones (e.g. oxytocin, vasopressin, endorphins, adrenaline). As a practitioner, the evidential base for Caldwell's account comes not from empirical work (in contrast to Rizzolatti and Meltzoff and Moore), but from her therapeutic experience in working with clients with severe developmental delays, combined with her training as a biologist. Given that all three accounts aim to explain the same human capacity, the contrasts between them are interesting. However, it need not be the case that the accounts are in conflict with one another. It is possible that humans' sensitivity to similarities between self and other may operate on all three levels: neurochemical, neural, and representational. This possibility is already underlined in the literature by, for example, the explicitly *intermodal* nature of Meltzoff and Moore's AIM model (i.e. the coordination of oral, visual, auditory, and proprioceptive information) and also the recent discovery of 'audiovisual mirror neurons', which discharge when a monkey either *hears* or *sees* an action being performed (whether by self or other) (Kohler *et al.*, 2002).

It is notable, however, that Caldwell's account provides the most explicit explanation as to why imitation should generate an orientation to the other. She argues that, even while the brain is in the process of detecting familiarity within an imitative act/experience, it is also recognizing that the self is not the source of that familiarity, because what it receives occurs in different modes from what it transmits (e.g. seeing and feeling the other tapping vs. only feeling one's self tapping). This unusual situation creates a disjunction, and the surprise created by that disjunction produces an orientation to the current source of the sensation—that is, the other. Caldwell's account thus brings into sharper focus my earlier observations concerning the importance of anticipation and surprise, in which I argued that surprise is essential in orienting an individual away from self and toward the other. Perhaps counter-intuitively, imitation is well suited to facilitating this shift. It fuels the process of engagement by boosting interest in the other, which makes possible negotiation of the boundaries between self and other. Interpersonal bartering cannot take place until both partners have an impetus for engagement. Imitation has the capacity to instil that interest, therein accelerating the swaying of the interpersonal cradle through which the transformation of subjective self-consciousness is achieved.

The account of imitation being developed here encourages reconsideration of (at least) three aspects of the way that 'imitation' tends to be conceptualized within the current research literature. First, a more expansive definition of imitation is required. The definition most commonly employed by researchers is

effectively one of sequential copying of acts—one partner reproduces an action that the other has previously performed. A revised definition of imitation would extend beyond this. The notion of imitation as ‘copying’ is so embedded within the field that authors often offer fairly casual operational definitions of imitation within the methods sections of their publications. For example, Heimann, Nelson, and Schaller (1989) analysed the frequency of neonates’ ‘imitative responses’ to facial expressions modelled by adults. Hobson and Lee (1999) examined whether (autistic) children would ‘copy’ the goals and styles of actions performed by an experimenter ten minutes earlier. Amongst Meltzoff’s many imitation studies are those where he has asked adults to ‘mimick’ the behaviours that infants performed with toys (Meltzoff, 1990) or scored the number of times that a child has ‘produced’ an action previously performed by an adult (Meltzoff, 1995). My own work has, similarly, examined the ‘repetition’ of another person’s vocalizations, gestures, or actions (O’Neill & Zeedyk, 2006). Such definitions invoke the notion of imitation in its standard, restricted form: turn-taking sequences where the behavioural act of one partner is repeated by the other. It is interesting that this operationalization is adopted both where a sequential-acts definition of imitation is theoretically endorsed by the theorist (e.g. Meltzoff, 1990) as well as where the theorist is seeking to go beyond the restrictions presented by it (e.g. Hobson & Lee, 1999).

The definition of imitation toward which I am moving encompasses a much wider variety of forms of imitation: mirroring, mimicking, copying, emulation, co-action and ‘joining’, indeed any activity/state in which *the focus of attention is the partner*. Imitation need not require discrete, consecutive acts. While it might certainly take the form of a turn-taking sequence, it could equally well refer to actions or states that are overlapping or simultaneous. It could also take the form of emotional expressions or bodily postures that the two partners exhibit concurrently over some period of time, and the imitative correspondence might be accomplished in any of a range of features, including rhythm, pitch, timing and intensity. Thus, a revised definition of imitation would begin by linking the traditional, acts-based conception of imitation (e.g. Meltzoff, 1990) with more emotional constructs such as mimetic sympathy and affect attunement (Stern, 1985; Trevarthen, 1998).

Arguably, such a broad definition of imitation could be regarded as too imprecise, rendering it difficult to demarcate imitative from non-imitative exchanges and risking the explanatory power that the study of imitation has generated to date. Certainly, such theoretical challenges would need to be tackled in the course of undertaking the kind of conceptual shift I am advocating here. It is notable, though, that similar challenges are now being faced in the study of intersubjectivity more generally. The concept of ‘intersubjectivity’ has come to envelop a wide territory, presiding over divergent types or forms of intersubjectivity, such as Stern’s (1985) distinctions between interaffectivity, interintentionality, and interattentionality, and Trevarthen’s (1979) stages of primary and secondary intersubjectivity. Indeed, Beebe *et al.* (2003) have recently argued that the term ‘intersubjectivity’ has come to encompass *too* wide a variety of meanings, given that it now refers to both presymbolic and symbolic intelligences. They suggest that the field begin to think much more actively in terms of ‘forms of intersubjectivity’. I am proposing similar kinds of shifts and distinctions within the study of imitation (albeit my proposal is oriented in the converse theoretical direction, highlighting the need for connections, rather than divisions, to be devised). Were the different ‘forms’ or ‘types’ of imitation I have highlighted linked under the same theoretical umbrella, it is likely that richer and more

compelling developmental accounts of subjectivity would be generated. Authors would be forced to offer theoretical reasons for distinguishing between different types of imitation, rather than allowing opaque theoretical boundaries to emerge in an *ad hoc* or implicit fashion. In short, I believe that developmental psychology stands a better chance of understanding the emergence of self when sequential acts cease to occupy a central place in our theorizing, and acts become simply one of a number of ways in which persons can engage imitatively with other persons.

This expanded definition of imitation accords with the notions of 'intensive interaction' (Caldwell, 2002; Nind & Hewett, 1998, 2000), 'augmented mothering' (Ephraim, 1979), and 'co-creative communication' (Nafstad & Rodbroe, 1999) used within the literature on adult communicative impairments. All of these approaches involve the carer seeking to match the client's own behaviour, as a way of supportively drawing him/her out of self-focus (e.g. obsessive routines, repetitive behaviours, emotional withdrawal) and into sympathetic engagement with others. The resonance between these conceptualizations and that of 'imitation' is not immediately obvious, however, given the developmental literature's attachment to the restricted definition of imitation as the copying of sequential acts. Practitioners working with communicatively challenged individuals may easily regard imitation in the same limited fashion as do their psychological colleagues. It is thus understandable that they might dismiss the term 'imitation' as insufficiently descriptive of their work. Caldwell (personal communication, 2003), for example, argues that she is seeking to do more with the adults she works with than 'merely' imitate them; she is seeking to speak with them and to respond to them in their own personal language. I am suggesting that 'speaking the language' of a partner is inherently imitative. Without the intimacy generated by imitation (as expansively defined here), it is impossible to speak with another emotionally—and thus also developmentally impossible ever to speak with them representationally.

Secondly, imitation needs to be reconceptualized such that its affective nature is foregrounded. Researchers have tended to overlook the emotional qualities of imitation, concentrating instead on its form and function. For example, Meltzoff and Moore's (1977) original studies of mouth opening sought to determine the rate of such imitative acts; Pawlby's (1977) studies of gestural imitation investigated spontaneous frequency; and Uzgiris and Hunt (1975) and Snow (1989) examined the relations between different modes of imitation (e.g. gestural, facial, instrumental). Beebe *et al.* (2003) charges that while each of the three leading accounts of infant intersubjectivity (as proposed by Meltzoff, Trevarthen, and Stern) emphasize positive emotion and bonding as the function of intersubjectivity, only Stern specifically theorizes the role of affect in development of intersubjectivity. It is likely that this neglect for the emotional properties of imitation stems from psychology's general orientation to cognitive processes (Reddy & Morris, 2004), as well as from Piaget's (1962) legacy, in which he sought to understand the role of imitation in the development of memory and representation.

The argument I have been making seeks to demonstrate that motivation and emotion are central to the process of imitation. This conclusion accords with the observations of those few theorists who have drawn attention to the affective foundation of imitation (e.g. Kokkinaki, 2003; Kugiumutzakis, 1998, 1999; Stern, 1985; Trevarthen, Kokkinaki & Fiamenghi, 1999; Valentine, 1930). Kugiumutzakis (1998, 1999), for example, sees the specific emotions of interest and pleasure as motivating the complementary, co-operative nature of imitative and other social

interactions. I would concur with this view, as it seems likely that the two alternating components of interaction explored earlier may each be associated with a particular emotion. Interest is liable to be experienced while anticipating the other's actions, and pleasure while being the object of their gaze. Stern's (1985) account of intersubjectivity goes as far as identifying attunement at the emotional level as the most important mode of sharing experiences in interpersonal exchanges. For him, communication differs from 'communion', in which two people maintain a thread of feeling connected. It is communion that infants need particularly throughout their first year of life, for other communicative functions (e.g. reinforcement, teaching, 'tuning' the baby up or down) are served via affectual matching. Accounts such as these point toward a mine of possibility that research on imitation has, as yet, left largely untapped.

Finally, the focus of developmental research on imitation needs to be reoriented from the baby as *imitator* to the baby as *imitatee*. The majority of empirical work on infant imitation has investigated the baby's ability to imitate others (i.e. to be the imitator). This includes work on neonates' ability to reproduce the facial movements, emotional expressions, and vocalizations of adult models (e.g. Heimann *et al.*, 1989; Kugiumutzakis, 1993; Meltzoff & Moore, 1977, 1983), as well as older infants' repetition of others' actions either with or without objects (e.g. Abravanel, Levan-Goldschmidt, & Stevanson, 1976; Bellagamba & Tomasello, 1999; Heimann, 2002; Masur, 1993; Meltzoff, 1988; Pawlby, 1977). Even Baldwin's (1906) classic work on the importance of imitation to the development of self-consciousness emphasized only the importance of a child's imitation of the other.

The acts now possible to [the child] and so used by him to describe himself in thought to himself, were formerly only possible to the other; but *by imitating that other* he has...found them applicable, with a richer meaning and a modified value, as true predicates of himself also. (Baldwin, 1906: 16, emphasis added)

The theoretical account proposed here requires that the field becomes more interested in the baby's experience of being imitated.

This consideration has received only limited attention to date, with much of that now rather dated (e.g. Field, 1977; Fouts, Waldner, & Watson, 1976; Roberts, Wurtele, Boone, Metts, & Smith, 1981; Thelen, Dollinger, & Roberts, 1975). Where the issue has received contemporary consideration, this has been led by Nadel (2002; Nadel *et al.*, 2004). In concert with my own view, she and her collaborators draw attention to the dual roles involved in imitative exchanges: imitating and imitation recognition. She contends that the field's models and explanations of imitation are incomplete without considering both roles. The central question that arises from such a perspective concerns the means by which observers could determine whether an infant is aware of being imitated. This is a more nuanced problem than is that of identifying a definitive act of imitation. Indeed, the superficial difficulties associated with this challenge may well help to explain why this aspect of imitation has been neglected by psychologists. What does 'awareness of being imitated' look like? What would count as evidence of this experience?

Interestingly, this problem is no different than that which has been already been tackled by theorists of intersubjectivity: what evidence needed to be provided that infants were active participants in social exchanges—that they expected, could detect, and respond to social contingencies? Trevarthen (1978, 1979), Tronick (Tronick, Als, & Adamson, 1979), and Beebe (Beebe *et al.*, 1985)

were among the first to highlight behaviours such as facial expression, orientation, and emotional intensity which, when examined in temporal correspondence with maternal states, revealed without doubt that infants are active partners in communicative exchanges. Nagy and Molnar (2004) have since gone on to provide striking psychophysiological data (e.g. heart rate patterns) as further evidence of infants' innate social expectancies. I would suggest that these same evidential markers could be used to assess infants' awareness of being imitated. Thus, much of the empirical information needed to address questions about the awareness of being imitated already exists in the developmental literature. The field would benefit, at this stage, from reconsidering the nature of our research questions and the frameworks within which we interpret findings, in contrast with carrying out new studies. Indeed, in order to support their case that infants have an early sensitivity to being imitated, Nadel *et al.* (2004) analysed the relative frequency with which infants exhibit behaviours such as gaze, smiling, vocalizations, reciprocal imitation, and laughter, in relation to imitative acts on the part of the mother. They were able to go as far as proposing a developmental sequence of behavioural indicators of sensitivity, on the basis of findings currently available in the literature. Critical to my argument is the point that the behaviours being utilized by Nadel are precisely the same as those that have already become central to our theories of infant intersubjectivity. We do not need to fathom out new types of evidence for understanding the experience of being imitated, but to reassess those that we already possess.<sup>8</sup> In doing so, we need to ensure that the theoretical focus is kept on the infant's experience of self, rather than the infant's (presumed) reasoning about the other, which is the orientation of much of the current literature.

In essence, I am arguing that it is the imitative response that the infant *receives from* the other, rather than the imitative response that the infant *offers to* the other, that particularly nurtures the development of self. Reddy's (2003) account also implies this, in that she argues that it is only in the response that the infant receives from the other that the infant is afforded the opportunity to confirm that the other's attention is indeed directed toward him/herself. In terms of the origins of subjectivity, it may be more important for babies to learn that 'You can be like Me' than it is for them to be able to demonstrate that 'I can be like You'.<sup>9</sup> If that experience does take primacy in fostering self-consciousness, then that is the experience that psychologists should move toward investigating.

Helpful insights into how imitation assists such development can be gained from Ephraim's (1979) and Caldwell's (2004, 2006) discussions about the reasons that imitative interaction works so effectively with adults and children with severe communicative impairments. Their argument is that humans experience themselves as agents (i.e. are self-aware) because they can produce acts that lead to predictable outcomes, in either themselves or others. For typically developing infants, this will apply to an infinite number of acts, but for individuals with impairments, the choice of acts that can lead to predictable outcomes may be extremely restricted, perhaps limited to only a single action.<sup>10</sup> Imitative interactions are effective because they give individuals, even with such extreme impairments, access to a rhythm, pattern, or other embodied experience that their brain recognizes as familiar, but in which they can also perceive a discrepant unfamiliarity. That is, their brain recognizes the sensation associated with the act (e.g. scratching, tapping, banging) as familiar, but it also realizes that they are not the source of that sensation. That unusual disjunction creates the element of surprise that is essential for an orientation away from self. It is this quality that makes imitation so effective as an intervention, even where the child or adult

with impairments has (as yet) no interest in or ability to engage with other people. The individual needs only to come up against an intriguing (and non-threatening)<sup>11</sup> incongruity in their experience of self. The response that that curiosity generates, no matter how slight, is enough to begin to lead the individual out of a solipsistic existence and into engagement with others.

## CONCLUSIONS

The aim of this paper has been to demonstrate the theoretical and empirical value that stands to be gained by recognizing the emotional intimacy inherent within adult–infant interactions. Developmental psychology continues to face significant theoretical problems in accounting for the origins of subjectivity (Reddy, 1996; Reddy & Morris, 2004), and it is my view that our current conceptual frameworks limit our ability to solve those problems. Meltzoff (1999: 252) has astutely observed that psychology has been undergoing a revolutionary shift in its understanding of development, and that a ‘furious search for a new framework’ has ensued since the collapse of Piagetian theory. I maintain that we should use that vigour not so much to gather new data as to reconsider the rich empirical findings we already possess. It is for that reason that I have attempted here to stretch and reconfigure the field’s conceptions of imitation and intimacy, and also to show how the study of atypical development can offer a valuable lens through which to approach the study of infancy. In searching for the origins of self, we need to stay alert to the points at which we would most benefit from altering the bearings of the course we have set ourselves.

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## Notes

1. I focus here on mother–infant interactions because this reflects the predominance of the available research. Encouragingly, detailed reports of father–infant interaction have begun to emerge in the literature (e.g. Braungart-Rieker, Garwood, Powers, & Wang, 2001; Feldman, 2003; Kokkinaki, 2003; Raiha, Lahtonen, Huhtala, Saleva, & Korvenranta, 2002).
2. This description is drawn from the title of Reddy’s (1991) paper: ‘Playing with others’ expectations: Teasing, joking, and mucking about in the first year’.
3. There is a large body of critical and feminist work (e.g. Bassin, Honey, & Kaplan, 1994; Phoenix, Woollett, & Lloyd, 1991) that has sought to explicitly theorize, deconstruct, and ultimately resist the cultural impetus toward making the mother’s and infant’s needs ‘identical’ (Leach, 1988: 8). It is telling that this body of literature rarely intersects with the mainstream developmental literature.

4. These points were also made more than two centuries ago by Smith (1759/1976), in his philosophical exploration of human emotions and sentiments.
5. Breastfeeding constitutes a notable exception to this observation. When a mother–infant dyad is breastfeeding in public, observers will tend to divert their gaze, even where mothers have already covered themselves (with a piece of clothing). Arguably, this is due to the implicitly sexualized nature of breastfeeding in Western culture, given that it involves a woman’s bare breast. The importance of this point, in regard to my argument regarding public–private boundaries, can be seen by the fact that social conventions do not lead observers to divert their gaze when an infant is being bottle fed, even though the posture of the mother–infant dyad and the nature of their interpersonal interactions will not differ from that of breastfeeding.
6. I thank Colwyn Trevarthen for this evocative description. See also Gerhardt’s (2004) text, *Why Love Matters: How Affection Shapes a Baby’s Brain*, for a richly developed account of the neurophysiology of love.
7. Psychoanalytic theorists have invested considerable effort in charting the long-term psychological and emotional trauma that can be caused when parents (and more specifically mothers) are unable to negotiate these boundaries in a manner that supports the infant’s independence and which therefore leads to a dysfunctional ‘fusion’ or ‘merging’ between the two psyches. See Ayers (2003) for further discussion.
8. It is valuable to note that studies are being carried out within the adult social literature that are designed to investigate the ‘effects’ of being imitated. Findings show that, for example, adults who are ‘mimicked’ (by a confederate experimenter), in comparison to those who are not mimicked, increase their prosocial behaviours, not only toward the imitator but also toward strangers (Van Baaren, Holland, Kawakami, & van Knippenberg, 2004), and that they also show more liking for the imitator (Chartrand & Bargh, 1999).
9. Thanks go to Cliff Davies for this particular construction of the argument.
10. A good example is Ephraim’s (1979) description of the case of Arnold (aged 14 and severely multiply disabled), whose only discernible act of agency was occasionally scratching the back of his neck. Ephraim’s extensive attempts to generate some level of engagement with Arnold (e.g. through massage, exercising limbs, tickling) all failed until Ephraim replicated Arnold’s act of scratching, on Arnold’s own neck. This effected a dramatic increase in his heart rate and in his concomitant awareness. On the basis of this very restricted exchange, Ephraim was quickly successful in building more complex play routines.
11. Caldwell (2004) discusses the extent to which incongruity needs to be perceived as non-threatening in order for it to invoke interest. The familiarity of the imitated pattern is crucial in inducing that sense of safety, as the security provided by familiarity balances the apprehensive novelty of the situation. Where an event is experienced as threatening, the individual’s stress regulatory system prompts a fight or flight response, making it physiologically impossible for him/her to stay interested in or engaged with the imitative interpersonal exchange.

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