

**Invited Commentary for target article by Vikram K. Jaswal and Nameera Akhtar,
“Being vs. Appearing Socially Uninterested: Challenging Assumptions about Social
Motivation in Autism”**

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**Being Misunderstood in Autism: The role of motor disruption in expressive communication,
implications for satisfying social relations**

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Abstract

Jaswal and Akhtar's outstanding target article identifies the necessary social nature of the human mind, even in autism. We agree with the authors and present significant contributory origins of this autistic isolation in disruption of purposeful movement made social from infancy. Timing differences in expression can be misunderstood in embodied engagement, and social intention misread. Sensitive relations can repair this.

Main Text

The human mind is not isolated, it is a dynamic relational subject animating the society in which it lives. Heidegger named this *Mitsein*, a state of 'being-with' that is the foundation of human experience. We are an ultra-social species, "obligatorily gregarious" (de Waal, 2006, p. 4).

Jaswal and Akhtar present an impressive array of evidence that individuals with autism retain a fundamental drive for social interaction and meaningful social relations. *Mitsein* in autism is intact, although its means of expression and social interaction are characteristically different. Recent research on the neuroscience of the human social brain, and affective 'moral' regulation of acts of social engagement, changes the theory of disorders of relating, including in schizophrenia and autism (Nieuwenhuys, 2012; Damasio, Damasio and Tranel, 2013)

In our work, we have examined the embodied nature of human social interaction in ontogenesis, measuring its origins in expressive intentions of the infant's subjective self (Delafeld-Butt and Gangopadhyay, 2013; Delafeld-Butt et al., 2018), made in relation to the movements of another (Delafeld-Butt and Trevarthen, 2015; Trevarthen and Delafeld-Butt, 2017a) that can be affected and contribute to pathology (Trevarthen et al, 2015). Feelings and desires expressed through a reciprocal coherence of felt action co-create social meaning (Trevarthen and Delafeld-Butt, 2013a; Delafeld-Butt and Trevarthen, 2015). After nine months an infant's acts of selective attention combine interests in objects and other persons (Hubley & Trevarthen 1979; Aitken and Trevarthen 1997), which shapes learning the values of a culture (Trevarthen, 2009; Trevarthen & Delafeld-Butt, 2017b).

In autism, we identify a fundamental disruption of the intuitive prospective motor control and its affective regulation in 'vitality dynamics' (Fournier et al, 2010; Stern, 2010). There is an alteration in the sub-second kinematic patterns of intentional movement of the arms and hands (Trevarthen & Delafeld-Butt, 2013b), whether to swing the arms, reach to touch, swipe a tablet or write a name (Cook et al, 2013; Torres, et al, 2013; Dowd et al, 2011; Anzulewicz et al, 2016; Grace et al., 2018).

Precise timing is required for efficient, purposeful movement and for effective expressive gesture in dialogue (Trevarthen, Delafeld-Butt and Schögler, 2011). Child psychiatrist Daniel Stern called the affective nature of the action pattern 'vitality affects' (Stern, 2010), autonomic regulations expressed in movements shaped to convey visceral states of feeling (Damasio, 1999; Porges, 2011).

The evidence shows these actions are timed differently in autism, and that perception of others' vitality affects is weakened (Rochat et al, 2013; Di Cesare et al, 2017). This perturbation of human communication and affectionate social engagement (Delafield-Butt and Trevarthen, 2013b) is expressed as autistic aloneness and self-protective isolation (St Claire, Danon-Boileau and Trevarthen, 2007), which can be misread as absence of sociability by persons with whom an autistic child is seeking meaningful engagement and shared learning (Trevarthen and Delafield-Butt, 2013b; de Jaegher, 2013; Cook, 2016).

A similar break in the reciprocal dynamic of the dyad is found in congenital Moebius syndrome that disrupts or paralyzes facial expression, interrupting affective resonance. Moebius is associated with a high incidence of autism (Gillberg and Steffenburg, 1989). Other neurodevelopmental motor disorders, such as Deficits in Attention, Motor Control and Perception (DAMP) and Developmental Coordination Disorder (CDC), have autistic features. 'Motor clumsiness' and autism overlap (Gillberg, 1983; 2003; Gillberg and Kadesjö, 2003).

A likely site of the origins of this autism motor disturbance is in brainstem sensory and motor integrative systems that are closely coupled to those responsible for affective evaluation and social motor expression, together with closely coupled cerebellar structures (Trevarthen and Delafield-Butt, 2013b; Coleman and Gillberg, 2012; Porges, 2011; Fatemi et al, 2012). Moebius syndrome follows a developmental error of the cranial nerves, and movement disturbance indicative of a brainstem growth error is evident in autism at birth (Teitelbaum et al., 1998), and in preschool children with autism (Bosco et al., 2018). Volumetric differences persist across the lifespan (Haar et al., 2014). Brainstem disruption affects one's core integration of psycho-motor experience, the so-called 'primary self' (Panksepp & Biven, 2012). It is not the wish for social engagement that is disrupted, but the coherence of primary sensory and motor information that make up the 'core self' expressed through body movement (Delafield-Butt and Trevarthen, 2017).

New theory of the 'social brain' gives importance to the forebrain systems centered on the insula, which develop as regulators of motor expressions of vital state and engagement of social affordances. Affective and social neuroscience is undergoing a change with recognition of the complexity of internal, basic proprioceptive and visceroreceptive evaluations of plans for action for the embodied self (Merker, 2007; Vandekerckhove and Panksepp, 2011), and for cooperative action in affectionate relations regulated by intersubjective sensitivity for these intrinsic parameters of consciousness with feeling (Shilbach et al, 2013). This approach supports transformations of psychological theory, with reduced dependence on linguistic communication and more appreciation of social meaning in embodied, non-verbal expression with 'vitality dynamics' to make meaningful contact. It supports an enhanced appreciation of shared awareness in 'the present moment' of what Damasio (2011) calls complex social emotional experiences, such as embarrassment, shame, guilt, contempt, compassion, and admiration. These will be complicated by abnormalities of motor coordination and timing that develop with autism.

Infants, like adults, avert eye-gaze in interactions that are felt to be too intense, a normal self-regulation (Jaffe et al., 2001). However, with autistics this behaviour may be appreciated differently. It is considered 'asocial' in literate, industrial cultures, which expect "conversational partners to respond promptly and to make their contributions to conversations unambiguous and relevant" (quoted by Jaswal and Akhtar from Grice, 1975). Conventions of motor expression in polite adult dialogues can affect the way autistic avoidance is received and cared for, and will influence the choice of therapy.

We are led by this thoughtful review to a re-evaluation of human understanding for a child's well-being, flourishing and developing. Meaningful social relations require sensitive appreciation and

forms of response that respects all forms of expression, and seeks to share experiences (Sullivan and Rees, 2008). When this is achieved, understanding and satisfaction in relationship can flourish.

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