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Movement and meaning

An investigation in early intersubjective development

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ABSTRACT. Abstract. In this article, we analyze how movement takes part in creating intersubjective meaning. We discuss what Daniel Stern termed ‘affect attunement,’ a primary way of constituting intersubjectivity. Based on an analysis of how movement, meaning-making, vitality affects, and primordial feelings interrelate in affect attunement, we show that primordial feelings and thereby movement play a much greater role in affect attunement than Stern proposed. This makes movement a primary meaning-making modality, indispensable to the development of intersubjectivity. To illustrate the relation between movement and affect attunement in psychological development, we discuss the role of movement in autism. Recent research suggests that differences in

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movement precede the onset of social-communicative deficits and may be primary to autistic development. Building on the proposed interrelation of movement and primordial feelings in affect attunement, we suggest that autistic movement differences illuminate the vital role played by movement in early intersubjective development.

KEYWORDS. Affect attunement; Autism; Intersubjectivity; Meaning-making; Movement.

1. Introduction

The role of movement in infant research is peculiar. Infants come moving into the world with not much else to rely on than their own bodies and the care that their immediate environment provides for them. It is well-established that it is not until the second year of life that linguistic and symbolic competencies play a major part in the mental life of infants.¹ Nonetheless, movement as an experiential origin for intersubjectivity, meaning-making, and development of the mind is rarely a topic for research in its own right despite the increasing interest in embodiment across academia over the past three decades. Scholars such as Husserl, Merleau-Ponty, Lakoff and Johnson, Varela, and Foucault have all in their own characteristic way challenged the dominant conception of the body – and thereby movement – as being mainly a mechanical object of biology, as nature opposed to culture or society. They proposed various alternative understandings of the body, for instance as a pre-objective experiential center, or as an existential entity in the process of continuous constitution, both within the greater domains of history and culture, as well as in more concrete relations to others. This focus on embodiment has been profoundly influential within cognitive science, linguistics, gender studies, and many other fields, and this emphasis on the corporeal has fundamentally altered how we view the nature of language, thought, sensing, and, of course, the mind-body problem. But infancy research has not taken such embodiment theories fully to heart. Perhaps this is because of the problem of reduction in the sciences. Renowned child psychologist Daniel Stern pointed this out: «The sciences are in a difficult situation. On the one hand, they are led by their nature to understand events at smaller and smaller levels of greater reduction, and in greater isolation one from the other, to understand better how they work.»² A consequence of this scientific process is the fragmentation of experience. This fragmentation is

1 See e.g., ROCHAT 2003.

2 STERN 2010, 5.

particularly challenging for infancy research, as the infant's world is so fundamentally based on movement in relation to the other, and if we want to understand the meaning(s) of movement we cannot assume that we can fragment the experience, and, at a later stage, put these fragments back together again without loss of significance. Stern posed the question: «How can we reintegrate it into the familiar 'wholes' that make up our everyday phenomenal experience?»^{3,4}

A consequence of the trend of reduction of experience into measurable units, in the sciences understood generally, is certainly that we get to understand specific aspects of experience to an ever-deepening degree. But it can also make certain questions more legitimate to ask than others, and the more non-reductive questions that presuppose experience as it is experienced, that is, experience as subjective and qualitative from a first-person perspective, as a comprehensive, meaning-making capacity faded into the background. In most body-focused research in developmental psychology, the role of the body is predominantly reduced to the relationship between two functional parts of the body, i.e., the relations between one sense modality and language or the movement of isolated body-parts.^{5,6}

3 STERN 2010, 5.

4 This question was addressed by the gestalt psychologists more than half a century ago. Since then, there have been many other attempts to solve it, for instance within critical psychology, dynamic systems theory, enactivism, and phenomenology.

5 PEREZ & ESPANOL 2016.

6 Meaning also presents itself in the movement of parts of the body, expressive of the overall intentionality of the body in movement. Christina Becchio and her research group (see, e.g., BECCHIO ET AL. 2012a; BECCHIO ET AL. 2012b; BECCHIO ET AL. 2008) established in a series of experiments that we can perceive meaning in movement correctly, even when isolated. For instance, participants were shown videos of an arm moving and were able to discern whether the intention behind the arm movement was to lift the apple and eat it oneself or lift it to give it to another person. These actions are rather simple, and the experiments are conducted with adults. Nevertheless, the results show that it is possible to distinguish intentional movement from non-intentional, and that it is possible to measure differences between intentional actions directed at other subjects, at the subject itself, and at inanimate objects. In other words, we can correctly attribute meaning to other peoples' action based on minimal movement information. Although there certainly are movements where the intentions behind are uncertain and ambiguous, in some cases the perception of movement and its meaning is clear and

Thus, the question of how movement participates in the creation of meaning in interaction in infancy is not much discussed. We use the concept of meaning in a broad way, referring to affective and bodily experiences of sensing. In infancy such experiences are largely pre-linguistic, happening before and as the infant gradually develops linguistic competencies.

This question of how movement participates in the creation of meaning is particularly pertinent to ask in developmental research today. In research on autism – an important area in contemporary developmental research – the last decade has brought increased awareness of the autistic body, and after three decades dominated by a focus on cognitive dysfunction, research increasingly recognizes autism as a different way of sensing and moving. Movement disturbances observable already in infancy are now recognized as integral to the autism spectrum⁷ and it has been proposed that movement offers a powerful lens into the variety of issues faced by autistic persons.⁸ But how should such movement differences be understood? On the one hand, autistic movement is described as a system of objectively measurable and quantifiable processes.⁹ On the other hand, it is emphasized that we need to understand autistic movement differences through how they manifest in subjective experience.¹⁰ Thus, although it is recognized that movement is a felt and subjectively experienced phenomenon, empirical research tends to fall back on an understanding of movement as a system of objectively measurable physiological processes. In addition, it is little understood how movement differences in autism affect the child's emerging ability to relate to and respond to others on an intersubjective level; a developmental trajectory commonly regarded as skewed in autism. Such an understanding requires conceptual resources that grasp movement as a modality of meaning rather than a

correct. Movement in and of itself reveals meaning.

7 FOURNIER ET AL. 2010; BRINCKER & TORRES 2018.

8 BRINCKER & TORRES 2018.

9 TORRES & DONNELLAN 2015.

10 ROBLEDO ET AL. 2012.

relationship between functional parts of an anatomical system. In other words, we need an understanding of how movement is experienced, how it plays into the formation of subjectivity, and how it constitutes meaning and shapes our ability to relate and attune to others. Through the concept of meaning, we focus on how we primarily bodily and affectively incorporate and adjust to others' intentions, be it pre-reflective or reflective intentions. Grasping meaning can certainly happen linguistically, too, but since bodily and affective processes are ontogenetically prior, bodily, and affective processes are more pertinent to early child development.

In this article, we want to investigate the meaning of movement as a comprehensive, qualitative phenomenon and discuss how movement is connected to the intersubjective constitution of meaning. As such, the question we ask is *How does movement create meaning in early interaction between caregiver and child?* To illustrate and support our analyses, we will use the case of early movement disturbances in autism, which have been shown to precede and underlie the social and communicative impairments typically associated with autistic development. Thus, autism presents an apt case for discussing the meaning of movement for intersubjective development. First, we briefly present the case of movement differences in autism, arguing that while the growing shift toward considering autistic movement is much needed and timely, there is a tendency to quantify and conceive of movement as a biological construct. Second, we review the role and understanding of movement in developmental psychology, arguing for a renewed consideration of the qualitative and experiential relation between movement and intersubjective development. Third, we present a positive account of movement and intersubjective meaning, focusing in particular on the role of movement in 'affect attunement',¹¹ as it is one of the powerful explanations as to how meaning develops in an intersubjective relation. We rely on the tradition of phenomenological psychology, but also draw inspiration from other traditions in areas where we find phenomenological psychology to be

11 STERN 1984; 1985.

lacking in theoretical development. Fourth, to illustrate and support our analyses, we reconsider the case of movement differences in autism, arguing that understanding movement as subjective and intersubjective already from the earliest stages of psychological development makes understandable how motor disturbances influence social difficulties in autism. As we will thus show, movement is a cornerstone of intersubjective development and meaning-constitution – an essential dimension of movement in danger of being overlooked when we ignore the qualitative and felt aspects of movement and their role in experience.

2. Movement and autism

Autism is commonly understood as a neurodevelopmental disorder characterized by pervasive difficulties with social interaction and the presentation of rigid and repetitive patterns of behavior.¹² Autism is today recognized as a spectrum that includes a group of conditions differentiated by gradations in severity rather than symptom profiles. Despite the manifold difficulties experienced by autistic persons, the core of autism has continuously been understood as a social impairment.¹³ Already in Leo Kanner's original 1943 case study, autism was cemented as a disorder of intersubjectivity, and autistic persons were vividly characterized by an «extreme aloneness from the very beginning of life»¹⁴ and an «innate inability to form the usual, biologically provided affective contact with people.»¹⁵

Since the 1980s, the dominant paradigm for understanding social impairment in autism has been the theory of mind hypothesis. According to this framework, autistic social behaviors can be explained by underlying impairment in the cognitive module allowing us to infer the mental states of others, rendering autistic persons

12 AMERICAN PSYCHIATRIC ASSOCIATION 2013; WORLD HEALTH ORGANIZATION 2018.

13 TORRES & DONNELLAN 2015; VERHOEFF 2013.

14 KANNER 1943, 248.

15 KANNER 1943, 250.

«mindblind.»¹⁶ The dominance held by theory of mind means that the essence of autism has been defined as a higher-order cognitive impairment. According to Ivan Leudar and Alan Costall, the theory of mind paradigm represents one of the latest and most influential «outbreaks of scientism in psychology.»¹⁷ By reducing behavior and bodily movement to mere observational data and evidence of a hidden cognitive system, theory of mind has deemed movement an in itself meaningless entity and autism a disturbance of a disembodied mind. Through theory of mind, autism research has long been plagued by the previously described tendency to view the body as a mechanical object, ultimately instituting a split between the body from subjectivity and experience.

During the past decade, theory of mind has been challenged by a growing body of empirical literature demonstrating subtle but profound sensorimotor differences, suggesting the vital role played by movement in the infant's and child's emerging ability to and relate to and understand others. Movement stereotypies such as peculiar hand movements, rocking, spinning, stimming, and swaying are frequent, as is minimal or unusual use of gestures and facial expressions, different body postures, tic-like movements of the face and head, different gait, and clumsiness. Some of these features are listed in current and past diagnostic criteria of autism, yet they have seldomly been recognized as integral for understanding core autistic impairments. However, in 1996, Martha R. Leary and David A. Hill published the paper *Moving on: Autism and movement disturbance*, in which they investigated and argued for the value of viewing traditional autistic symptoms in relation to underlying movement differences.¹⁸ This groundbreaking article instigated a growing body of research investigating movement differences in autism, their role in neurodevelopment, in observable behaviors typically associated with autism, as well as how they affect the lives of autistic persons.

16 BARON-COHEN 1995; BARON-COHEN ET AL. 1985.

17 LEUDAR & COSTALL 2009, 11.

18 LEARY & HILL 1996.

It has been shown through retrospective video studies of infants who would later be diagnosed as autistic that «abnormalities in movement [...] can be seen very early in infancy, long before the behaviors in social settings that currently form the basis for the diagnosis of autism.»¹⁹ A defining feature of such movement abnormalities, observable already from three to six months of age, is persistent asymmetry in various postures and in how different movements are combined.²⁰ Moreover, following Kanner's and Ornitz and colleagues²¹ reports that infants with autism fail to make anticipatory postural adjustments when being picked up by caregivers, Brisson and colleagues²² investigated motor anticipation and adjustment during feeding situations and found that infants who would later be diagnosed with autism have difficulty with mouth-opening anticipation when being spoon-fed, distinguishing this group from typically developing infants already in the first month of life. Such studies lend significant evidence to the fact that movement disorders precede, and may in fact underlie, social and communicative impairments typically associated with autism.²³

A perspective on autistic movement, which has recently been gaining ground, is that of micromovements, «very broadly conceived as including all minute fluctuations in bodily rhythms and their rates of change over time.»²⁴ Central to this notion of micromovement is the principle of reafference reflecting the complex interdependence between movement and sensation. Following the classical work of physiologists Von Holst and Mittelstaedt in the 1950's, as well as the work of Uexküll in theoretical biology and Gibson in psychology, the basic idea is that bodily movement is dependent on a stream of sensory feedback, *reafference*, generated by the movement itself. As indicated by studies of Parkinson's disease, a lack of such feedback

19 TEITELBAUM ET AL. 1998, 13987.

20 TEITELBAUM ET AL. 1998; TEITELBAUM ET AL. 2004; ESPOSITO ET AL. 2009.

21 KANNER 1943; ORNITZ ET AL. 1977.

22 BRISSON ET AL. 2011.

23 ESPOSITO ET AL. 2009; NAYATE ET AL. 2005; FOURNIER ET AL. 2010.

24 BRINCKER & TORRES 2018, 4.

from kinesthetic sensing, which is found to be significantly reduced in individuals with autism²⁵ leads to reduced bodily self-awareness and disruption of the individual's movement patterns.²⁶ As have been proposed,²⁷ repetitive behaviors such as stimming may be products of such disturbances of kinesthetic feedback causing the individual to actively produce a sense of one's own bodily movement. Indeed, autistic persons experience tremendous difficulty generating fluent and 'automatic' movement patterns, which reflect some of the earliest descriptions of autistic behavior, here from Hans Asperger's 1944 case study:

He was never able to swing with the rhythm of the group. His movements never unfolded naturally and spontaneously [...] from the proper co-ordination of the motor system as a whole. Instead, it seemed as if he could only manage to move those muscular parts to which he directed a conscious effort of will [...] nothing was spontaneous or natural, everything was intellectual.²⁸

It is not hard to imagine how such movement disturbances could affect the ability to engage fluently in the fine-tuned temporal and bodily dynamics constitutive of social interaction. As have been suggested by numerous authors,²⁹ movement differences may provide a promising frame of understanding for social and communicative issues characteristic of autism. According to Donnellan and colleagues,³⁰ it makes little sense to talk about social issues without taking into account movement differences:

For example, children with autism are often described as lacking reciprocity. Esther Thelen (1941–2004), an innovative

25 TORRES ET AL. 2016.

26 TORRES ET AL 2014.

27 WHYATT & CRAIG 2013; WHYATT 2017.

28 ASPERGER 1991, 57.

29 See, e.g., LEARY & HILL 1996.

30 DONNELLAN ET AL. 2013.

researcher of infant development, upon reviewing the issue of motor development in autism, asked: «How can you talk about ‘reciprocity’ or lack thereof as a psychological phenomenon if the child has motor problems?» (pers. communication, 1997). In the course of development, if individuals move and respond in idiosyncratic ways from infancy, they will experience all interactions within a unique frame that most certainly differs from that which is called typical. The cumulative effect of such interactions will be one in which all aspects of relationships, including how to establish and maintain them, may be markedly skewed from the broader cultural consensus and expected rules of how relationships work.³¹

It has been well established that social interaction relies on the spontaneous and often unintentional coordination and synchronization of one’s moving body with that of the other.³² Such coordination relies on motor skills, and studies suggest that movement differences may play a decisive role in autistic persons’ difficulties with social interaction, e.g., interbodily coordination and interactional synchrony.³³

Classical and contemporary approaches to movement variability in autism suggest movement as an important factor in autistic development that constitutes a promising framework for understanding intersubjective development in autism. While this recent ‘embodied turn’ in autism research demonstrates an emerging recognition of the importance of considering autistic embodiment, the underlying assumption in this view is that human behavior can be reduced to something measurable. As Torres and Donnellan rhetorically pose the question: «But can we go beyond the descriptive, observational nature of this definition and objectively measure that

31 DONNELLAN ET AL 2013, 74.

32 BERNIERI AND ROSENTHAL 1991; CHARTRAND AND BARGH 1999.

33 FITZPATRICK ET AL 2017; GEORGESCU ET AL 2020.

amalgamate of motions and sensations that we call behavior?»³⁴ Indeed, an explicit aim of studying movement in autism is developing increasingly fine-grained neuroscientific methods for precise measurement, quantification, and analysis of micro-movements that escape clinical observation.³⁵ In our view, such aims and assumptions run the risk of fragmenting movement as an experiential Gestalt, as Daniel Stern points out in his critique of the sciences' tendency to approach finer and finer levels of precision, reduction, and isolation. To move forward in understanding the relation between movement and the development of intersubjectivity, we need a better understanding of the qualitative and felt dimension of movement. This need for a qualitative understanding of movement is not just evident in autism research but also in developmental psychology in general, where movement is mostly investigated quantitatively.

3. Movement in developmental psychology

Perez and Español³⁶ argue, in their review of multi-modal studies of adult-infant interaction, that movement was generally a central focus of the developmental studies made in the 1970's, because kinesthetic aspects were considered core for understanding the organization of adult-infant interaction. These studies, that focused on movement and interaction, centered on temporal organization and 'segmentation of behavior into units,³⁷ in other words, on the quantification of movement. They contend that the main findings were the importance of synchrony,³⁸ synchrony before alternation³⁹ and many-layered temporality.⁴⁰ Perhaps due to a more general linguistic turn, the focus

34 TORRES AND DONNELLAN 2015, 3.

35 TORRES AND DONNELLAN 2015.

36 PEREZ AND ESPAÑOL 2016.

37 PEREZ AND ESPAÑOL 2016, 382.

38 STERN ET AL., 1975.

39 BEEBE ET AL. 1979.

40 FOGEL 1977.

on kinesthetic features was exchanged for a tendency to focus on the temporal organization of speech as the key to understanding interaction. As such, Perez and Español argue that there is a time-gap between the pioneering studies of movement in the 1970's and the growing number of studies that focus on movement today. This time-gap, however, has not led to a qualitative fissure. The topics that are investigated today, Perez and Español claim, are of the same kind as those of the 1970's: The current main tendency when it comes to multimodal infancy research is focusing on temporal organization, segmentation of behavior into units, and the following microanalysis of these segments of behavior. Considering the general trend of embodiment studies, they predict that studies of kinesthetic features or movement will become increasingly influential on studies of human cognition and interaction.

In their review, Perez and Español do not cover the influential research of Esther Thelen and her associates, which is surprising given their work on infants' development of motor skills from a dynamic systems point of view. They investigated the neurological, biological, and cognitive underpinnings of movement in specific environments, stressing the multi-causal background of movement. For instance, with reference to the 'newborn stepping reflex,' they observed that kicking and stepping as movements are very similar. The questions they pursued then were: what is it in the brain that makes the latter disappear and the former remain, and how do the various parts of our context-dependent, dynamic systems facilitate the development of different motor skills?⁴¹

Thelen⁴² stated that «motor skill development was the first topic in the scientific study of infancy,» and argued that the way Piaget⁴³ asked the question about how abstract and logical thinking develops from the sensorimotor life of the infant still is the 'scaffolding' for developmental research on the topic. In other words, the general

41 See e.g., THELEN & SMITH 1995; THELEN 2000.

42 THELEN 2000, 95.

43 PIAGET 1952.

research focus was on the developmental trajectory from the more sense- and movement-based life of the infant to the rational adult mind. The traditional view of movement, Thelen suggested, is rather simple where movement is caused by external stimuli with afferent and efferent significance,⁴⁴ and where it is easy to separate cause and consequence. She granted, however, movement a much more fundamental role in experience and approached movement as a form of perception, thereby highlighting a more holistic view of movement. Thelen and Smith⁴⁵ reasoned: «movement must itself be considered a perceptual system.» When they argued that it is its own perceptual system, they contended with Gibson⁴⁶ that the various senses are dependent on movement to function; the infant cannot explore the world without movement. For instance, they argued that «it is movement that provides the dynamic sampling of stimulus attributes»⁴⁷ and that movement is, as such, «the common primitive» of development in general.⁴⁸ Movement is at the foundation of experience, and «[...] the infant's basic organization of the world must be paced and constrained by the ability to produce and control movement»⁴⁹ e.g., to control the movement of the head. Thus, in Thelen and her colleagues' work, movement is fundamental to how the infant develops. Their research is an example that shows how the general trend that Perez and Español⁵⁰ point to is exactly that – a trend, but not all there is in terms of multi-modal studies of infant-adult interaction as there exists work that goes against the tendency toward reduction in developmental psychology.

In comparison to their lack of treatment of Thelen's work, Perez and Español⁵¹ do mention Daniel Stern's work, but they do not examine

44 THELEN 2000, 194.

45 THELEN & SMITH 1994, 193.

46 GIBSON 1979.

47 THELEN & SMITH 1994, 194.

48 THELEN & SMITH 1994, 194.

49 THELEN & SMITH 1994, 195.

50 PEREZ & ESPAÑOL 2016.

51 PEREZ & ESPAÑOL 2016.

how he conceptualizes movement. Stern's⁵² work is particularly enlightening as he also described movement as the primary part of experience that creates the mind. In contrast to Thelen's work that highlights biology and cognition in dynamic systems, he focuses on the phenomenology of movement, highlighting affect. As movement occurs, he argues, we experience a «temporal contour» or a «time profile.»⁵³ In other words, through movement we experience time. The same is the case for the experience of space – through movement we sense that there is a variation in the material context that surrounds us. With this experience of space, we perceive that movement can have a directionality and an intentionality; we move mainly in a certain direction with an intentionality (not specified by Stern). Gradually we also perceive «forces 'behind' or 'within' movement.»⁵⁴ Together he calls these aspects the «five dynamic events»⁵⁵ that are the «fundamental dynamic pentad,»⁵⁶ the basics of experience; the events that are fundamental or primary to our affective experience of ourselves and of others.

Movement and the experience of force is the basis of what Stern called the vitality affects. Stern used the concepts of vitality affects and affect attunement to describe intersubjective affective and temporal patterns of organization and development. The vitality affects are experiential forms that create the «contours» for psychic content. They are dynamic, affective forms that can be described in a way similar to movement. The vitality forms can be «exploding», «swelling», «drawn out,» and «forceful,»⁵⁷ just to mention a few. As Stern argued, they are neither sensations nor cognitions in the sense that these most often are described. Instead, they are «the felt experience of force – in movement – with a temporal contour, and a sense of aliveness, of

52 STERN 2010.

53 STERN 2010, 4.

54 STERN 2010, 4.

55 STERN 2010, 4.

56 STERN 2010, 5.

57 STERN 2010, 8.

going somewhere.»⁵⁸ He also gives them top priority: they are «...the most fundamental of all felt experience when dealing with other humans in motion.»⁵⁹ Stern's qualitative and quantitative studies lead him to coin the term affect attunement as one of the primary ways in which intersubjectivity is created. Affect attunement is a process where two people, or more, attune to each other's affects, for instance through carrying or playing with the child. Movement is, as such, at the heart of affect attunement.

Stern and Thelen's works are the most influential conceptualizations of the qualitative meanings of movement in developmental research. Thelen questioned how different motoric skills developed, and placed movement at the heart of the infant's cognitive functioning, interrogating how «the components cooperate to produce stability or engender change.»⁶⁰ Stern, by comparison, asked how movement participates in the creation of the vitality affects; how movement is fundamental to experience as a basis for sensing and the development of the mind. In this article, however, we inquire into how movement is a modality that facilitates intersubjective meaning-making. Although both Thelen and Stern reflect upon it, we will deepen the perspective by discussing the nature of movement and meaning. What we will argue is that movement is an experiential modality that is just as fundamental to the experience of meaning as our five standard sense modalities. The latter are characterized by each having their own sensory system which relays information that cannot be given in any other way without a loss of information.⁶¹ They are all dependent upon movement in order to function and they are «nutritional channels for meaning.»⁶² Movement is also characterized by irreducibility, but in comparison to the other senses it has primacy in the development of intersubjectivity since it is immanent to all the other senses; they are all dependent upon movement. It is also likely

58 STERN 2010, 4.

59 STERN 2010, 4.

60 THELEN 2000, 79.

61 ROALD & K PPE 2015.

62 K PPE ET AL. 2008.

that it is through movement that the senses are either integrated into, or developed as, an experiential unity, a *sensus communis*.⁶³

4. What is movement?

Within phenomenology it is Maxine Sheets-Johnstone⁶⁴ who has most thoroughly discussed the nature of movement and has critiqued the standard, objectifying way of perceiving movement, where movement is positioned in time and space as that which brings us from A to B. She relies on Husserl's concepts of animation – the primary feeling of being alive – and the kinaesthesia – the sensing of one's own movement. She argues extensively for movement as «the generative source of our primal sense of aliveness and our primal capacity for sense-making.»⁶⁵ She proposes that movement is comprised of four qualities, which, taken together, form the essential or basic structures of movement. These qualities should not be viewed as different parts of movement, which can be parsed into different units and later added together to form a unity. Instead, they are «internally bound,»⁶⁶ forming a coherent unity, essence, or gestalt in experience which is constantly felt. It is only through reflection that they can be separated and analyzed individually. These structures, she claims, are necessary and sufficient for the description of *any* kind of moment; they are cardinal. In and of themselves, the cardinal structures are essential as an answer to the question of what movement is. Yet this is but one of the questions the solution of which they may contribute to. Movement, Sheets-Johnstone argues, is not just the beginning of animation, but an origin for human experience and for the

63 It is not possible to reduce sensation to one modality in consciousness, since the ontogenetic development of the senses establish the place where the different sense stimuli are combined (STEIN 2012) into what Aristotle called *sensus communis* (ARISTOTLE 2001 [c. 350 BC]). An area for future investigation is how the *sensus communis* is constituted in autism.

64 See, e.g., SHEETS-JOHNSTONE 2015 [1966]; 2011.

65 SHEETS-JOHNSTONE 2011, 114.

66 SHEETS-JOHNSTONE 2015 [1966], 51.

development of consciousness. Drawing on her experience as a dancer and a philosopher, she arrives at these cardinal qualities through observation of herself as she moves, through observation of how others move, and through reflections on the nature of dance.

In her book, *The Phenomenology of Dance*,⁶⁷ Sheets-Johnstone aligns movement with vital force, which is the experiential essence of the four cardinal qualities: tension, projection, linearity, and amplitude. Rather than being Kantian a priori categories, these cardinal qualities are linked to the phenomenology of experience and the lived qualities of force, not only in space and time, but as creating the subjective experience of space and time. These features can not only be observed in movement, but also have significant felt aspects.

Tension is perhaps the most visible aspect of force. Sheets-Johnstone does not regard it as the fixed, measurable contraction of muscles, but as a phenomenologically visible intensity of projection. On an overarching level, projection can be understood as having three mutually exclusive features: «abrupt, sustained, and ballistic,»⁶⁸ and the projection has a certain direction, a certain linearity. Although different body parts may move simultaneously in opposite directions, the body has a «total directional configuration of the moving force.»⁶⁹ This expansiveness of the total form, of the linearity, projection and tension is called amplitude and can be, for instance, «small and compact»⁷⁰ or «intensive to extensive, contained or diffuse.»

Following Sheets-Johnstone's argumentation, the child moves with and feels these cardinal structures in the interaction. How they are felt and how the feeling is dispersed or collected remains an open question. Nevertheless, important in this context is *that* they are felt and thereby contain registration, just as the standard sense-modalities register specific aspects of the experiential field. This felt aspect is central to the constitution of intersubjectivity. Sheets-Johnstone does not herself investigate how movement constitutes intersubjectivity,

67 SHEETS-JOHNSTONE 2015 [1966].

68 SHEETS-JOHNSTONE 2015 [1966], 56.

69 SHEETS-JOHNSTONE 2015 [1966], 53.

70 SHEETS-JOHNSTONE 2015 [1966], 54.

but points to its potential in Stern's and Thelen's work. She focuses on the «I move», not the «we move» but she introduces the concept of «intercorporeal sense-making»⁷¹ and emphasizes that tactile-kinesthetic bodies are «central to social communication and to social semantics.»⁷² In other words, she highlights the centrality of movement to meaning-creation.

5. Movement, sense, and meaning

The French phenomenologist Merleau-Ponty⁷³ argued that we cannot escape meaning: «Because we are in the world, we are condemned to meaning, and we cannot do or say anything without it acquiring a name in history.»⁷⁴ But meaning can be understood in at least two different ways: narrowly, as connected to language, and broadly, as connected to perception, with perception being the beginning/genesis of language. The founder of analytic philosophy, Gottlob Frege,⁷⁵ distinguished between 'Sinn' (sense) and 'Bedeutung' (reference) within the framework of logic. With phenomenology and other traditions such as pragmatism and cultural-historical psychology the distinction has different content, namely that meaning-making is not only a linguistic process. First and foremost it is pre-linguistic. Meaning begins with perception or sensing (sense-making), and sense-making is the ontogenetic foundation for linguistic meaning-making. Late Husserl⁷⁶ pointed out the tension between meaning as pre-reflective and as linguistic:

It is easy to see that even in [ordinary] human life, and first of all in every individual life from childhood up to maturity, the

71 SHEETS-JOHNSTONE 2011, 329.

72 SHEETS-JOHNSTONE 2011, 329.

73 MERLEAU-PONTY 1962 [1945].

74 MERLEAU-PONTY 1962 [1945], XXII.

75 FREGE 1960 [1892].

76 HUSSERL 1970 [1954].

originally intuitive life which creates its structures [Gebilde] through activities on the basis of sense-experience very quickly, and in increasing measure, falls victim to the seduction of language.⁷⁷

Husserl argued that sense-experience actively shapes the forms or structures for experience in general and that the power of language hides the importance of this primary sense experience, the «originally intuitive life.» This does not mean that linguistic meaning is unimportant, but that this linguistic meaning is based on pre-linguistic meaning. In Husserl's writings meaning arises in the most basic structure of experience that is intentionality: through perception the phenomena appear and this is the most basic form of meaning.

This emphasis on sensing or perception as part and parcel to meaning making is central to theories today that try to understand how subjectivity and intersubjectivity develop. For instance, De Jaegher and Di Paolo⁷⁸ introduce «sense-making» as a foundational concept, synonymous with «meaning.» They develop an enactive account of social cognition and argue that: «Exchanges with the world are inherently significant for the cogniser and this is a definitional property of a cognitive system: the creation and appreciation of meaning or *sense-making* in short.»⁷⁹ To them, sense- and meaning-making are synonymous concepts and they argue that perception is an active, continuous process of sense- or meaning-making. «Sense-making is a relational and affect-laden process grounded in biological organization.»⁸⁰ It is through participation and action that meaning constantly occurs. As such, they argue against a passive, representational stance: as persons, we do not passively perceive the world and build representations of it that only later obtain meaning. Here, they highlight activity and the biological origin of meaning-making processes while Husserl includes both activity and passivity

77 HUSSERL 1970 [1954], 362 (italics in original).

78 DE JAEGER & DI PAOLO 2007.

79 DE JAEGER & DI PAOLO 2007, 488.

80 DE JAEGER & DI PAOLO 2007, 488.

as central processes in meaning constitution, focusing on the phenomenology of experience. Common to both accounts, however, is a view of meaning as inherent in our basic ways of perceiving the world.⁸¹

The pragmatist philosopher Mark Johnson,⁸² also inspired by phenomenology, argues for a view of meaning in which it is immanent to movement and specifies dimensions of infant experience in which such meaning develops. These appear in what he calls ‘the aesthetic dimensions of experience’. Aesthetics here is to be understood in its broadest sense where central aspects are «qualities, images, patterns of sensorimotor processes, and emotions.»⁸³ He claims that the reason for the historical primacy of the view of meaning as linguistic lies in the Cartesian conceptualization of the mind and brain as being separate. He distinguishes between the conceptual-propositional theory of meaning and the embodied theory of meaning: basic to the conceptual-propositional line of thought is that meaning arises through the primary unit of propositions, or statements, as the expression of truth. They are building blocks of meaning. But the conceptual-propositional theory of meaning ran into problems because of the obvious meaningfulness of emotional life. Therefore, a categorical distinction was made between cognitive meaning and emotional meaning,⁸⁴ wherein cognitive meaning was the only one seen as objective and thus fit for scientific inquiry. In the embodied view of meaning, however, the intertwined aspect of cognition and emotion is acknowledged, and emotions are viewed as essential to sense- and meaning-making. What is essential to this embodied meaning, or ‘immanent meaning’, as Johnson calls it, is that we are born into meaning, just as we are born into movement. With Sheets-Johnstone, Johnson argues that movement is the basis for

81 This is not a new argument. Franz From, for instance, showed theoretically and experimentally in his book *Perception of Other People* that we continuously ascribe sense to the situations we are in (FROM 1971 [1953]).

82 JOHNSON 2008.

83 JOHNSON 2008, 1.

84 JOHNSON 2008, 9.

meaning, not propositions: «I want to suggest that even at this nonconscious level, these characteristics of movement are forming the basis of both the meaning of our movements, and, at the same time, the meaning of the world that we move within.»⁸⁵

6. On the meaning of movement in affect attunement

When questioning how movement structures intersubjectivity, Sheets-Johnstone points to Stern's description of affect attunement. Both Stern and Sheets-Johnstone largely develop their views on movement and affect based on a phenomenological approach that is greatly inspired by Husserl. Stern proposes that affect attunement is the intersubjective alignment of vitality affects; it is the toning of vitality forms.⁸⁶ Affect attunement takes place when, e.g., the mother repeats the infant's experience, but the repetition does not comprise imitation but rather a repetition or variation of the dynamic aspects of the experience, often in a different modality.⁸⁷ Examples are when the caregiver calmly strokes the infant to sooth it when it cries or rhythmically moves with the infant to sooth or awaken it. In other words, the caregiver attunes to the infant's affective world and shows that she has understood – to the best of her ability – the infant's experience. It is the primary steps in the development of a shared world and a shared understanding; the beginning of intersubjectivity.

Stern discusses his concept of vitality affect in relation to Antonio Damasio's⁸⁸ concept of background feelings which are made up of all kinds of sensations, whether from the body or mind (or body-mind). They are momentary, sensate experiences that give rise to feelings. They form the sensate background of our existence. Damasio argues that our sensations become feelings when we become aware of them,

85 JOHNSON 2008, 24.

86 See Køppe, Harder, and Væver for a discussion of Stern's variations of the concepts of vitality affects, vitality forms, and vitality dynamics (KØPPE, HARDER, & VÆVER 2008).

87 STERN 2010, 113.

88 DAMASIO 1994; 1999.

and, as such, that they are a background for our entire mental life.⁸⁹ In Damasio's⁹⁰ more recent book *Self Comes to Mind*, he substitutes the concept of background feelings with the more generative concept of primordial feelings. He specifies the function of background feelings (now primordial feelings) even further. As with background feelings, the primordial feelings are the direct perception of body states «along varied dimensions, for example, along the scale ranging from pleasure to pain, and they originate at the level of the brain stem rather than the cerebral cortex. All feelings of emotion are complex musical variations on primordial feelings.»⁹¹ Damasio argues that the primordial feelings are *images* that occur continuously when we are conscious. By 'image' in this context he means that the primordial feelings are not separate or discrete responses but can be a «richly mixed signal.»⁹² In other words, the primordial feelings arise through a synthesizing function, and when they are primordial it is not just because they are the first that we experience, but they are also the basis from which all other feelings develop. As such, the primordial feelings appear similar to the vitality affects but Stern delineates some central differences between his own concept of vitality affects and Damasio's background feelings:⁹³

Background feelings refer more to the overall feel of the well-functioning and changes in the inner state of the system at a given moment. Vitality dynamics refer mainly to the shifts in forces felt to be acting during an event in motion, and this focus more on the dynamic qualities of the experience, in particular the profile of the fluctuations in excitement, interest, and aliveness. Background feelings are about the «feeling of

89 Michel Henry has conceptualized this origin for subjectivity within the framework of phenomenology as an «internal bodily quivering» (HENRY 1975 [1965]).

90 DAMASIO 2012.

91 DAMASIO 2012, 21.

92 DAMASIO 2012, 22.

93 Damasio and Stern operate within rather different epistemologies with Damasio being a neuroscientist classified as a non-reductive physicalist (NUSSBAUM 2001) while Stern has a background in both psychoanalysis and phenomenology.

what happens.» Vitality dynamics are about the «feel» of being alive and full of vitality. Clearly, both are needed.⁹⁴

Stern's delineation implies the importance of more than the vitality affects as an explanation of the meaning of movement in affect attunement. Background feelings refer to movement more broadly than the vitality affects and refer to what is happening generally on bodily level rather than narrowly in terms of the experience of vitality. As such, we could assume that background feelings are more primary (as Damasio would suggest). Yet, Stern is somewhat unclear on the issue. He describes the vitality affects as forceful: «they [the vitality affects] are the felt experience of force – in movement – with a temporal contour, and a sense of aliveness, of going somewhere.»⁹⁵ At the same time, he sees them as primary: «I argue that dynamic forms of vitality are the most fundamental of all felt experience when dealing with other humans in motion.»⁹⁶ Further, Stern argues that

in the earliest stages of life, the infant is first or predominantly sensible to vitality forms. Movement is the most primary event and the most salient, but movement does not come alone. Movement takes time to unfurl. It necessarily traces a temporal profile. And once the infant has experienced intentional action and effort, even in a primitive form, motion will be imbued with force.⁹⁷

Since Stern links vitality affects to the feel of vitality, he either overstates the primacy of the vitality affects to all felt experience or the difference between primordial and vitality affects. Although the first movements certainly can be forceful – often the infant is born crying – it can also involve the more subtle movement of turning the head or opening and closing the eyes (which have accompanying primordial

94 STERN 2010, 46.

95 STERN 2010, 8.

96 STERN 2010, 8.

97 STERN 2010, 111.

feelings). In that sense the vitality affects are not primary as primordial feelings are continuously present in experience, whether in the background or the *foreground* of our experiential field. Therefore, in relation to affect attunement there is no principled reason why it should begin with the vitality affects. It can begin with it, but it can also begin with the less intense attunement of the background feelings as, for instance, the newborn baby is quietly cradled to sleep. The affect attunement might be most visible, however, through the more intense affect attunement of the vitality affects.

Stern and Damasio do not describe in detail how we move from background feelings to social emotions. In *Looking for Spinoza*, Damasio⁹⁸ questions the nature of social emotions and how they come about through the usual discussions of innateness versus learned behavior. Since animals also have social emotions, there should be elements of innateness, at least in some social emotions – there should be a biological «disposition,» activated in the proper environment, he argues. That does not mean that there are no elements of learning in place, and Damasio claims that we should be able to understand the social emotions in some juxtaposition of Darwin and Freud. The affect attunement, however, has explanatory power as to how, beginning with background feelings and vitality affects, we attune to the other whereby the other «settles» or «sediments» in our emotional life. This way our emotions, or our affective lives, become socially or intersubjectively constituted. In other words, one way in which movement structures the development of intersubjectivity is through its role in primordial feelings and vitality affects in the affect attunement.

Primordial feelings arise against the background of movement, just as movement happens against the background of primordial feelings. Sheets-Johnstone's conception of force as the «total configurations of movement» includes felt aspects which she aligns with Stern's concept of vitality affects. It follows that it should also be aligned with Damasio's concept of primordial feelings. Following Sheets-

98 DAMASIO 2003.

Johnstone's and Damasio's argumentation, the primordial feelings as synthesized should also include the feeling of movement, or the feeling of force as 'the total configuration of movement.'

7. Autism and the primacy of movement

Sheets-Johnstone, Stern, and Damasio jointly reveal the basic experiential features of the human mind, that is, how affect and movement mingle in all human experience. They pave the way for new phenomenological investigations into the role of movement and affect in all experience, providing us with new concepts for understanding experience and its constituents. In this final section, we follow their lead and discuss how movement differences in autism illustrate and support our analysis of the role played by movement in early intersubjective development. First, we focus on Sheets-Johnstone's and Stern's accounts as illuminating movement differences in autism as obstacles for forming and following a shared rhythm of bodily movement essential to affect attunement. Second, we consider reduced kinesthetic reafference in autism through Damasio's concept of primordial feelings and phenomenologically elucidate the relation between the sense of one's own body in motion and the ability to attune to the bodily expressions of others through the analyses of Husserl and Merleau-Ponty supported by first-person autistic narratives.

As described previously in this article, movement differences in autism rely on kinesthetic reafference and proprioceptive as well as interoceptive sense of the rhythm, fluctuations, and minute movements of the body. Following Sheets-Johnstone, there is necessarily a felt aspect to such motor differences as disturbances in how autistic infants and children *sense their own bodies in motion* impact their immediate sense of the qualitative dimensions of movement. Considering Sheets-Johnstone's cardinal qualities of movement in this context, differences in muscle tone may impact the tension and

expressive intensity of movement, difficulty with movement preparation and execution may disrupt one's felt sense of the projection and linearity of one's movements, asymmetry and asynchrony of bodily movement as well as general clumsiness and unusual postures may impact the amplitude and total configuration of bodily movement. However, as discussed, Sheets-Johnstone's account deals primarily with the sense of one's own movements rather than the question of the role of movement in intersubjective meaning-making.

On Stern's account, dynamic alignment of ongoing movement patterns is part and parcel of affect attunement. From this perspective, social understanding and interaction relies on the ability to flexibly synchronize and coordinate our movements with the bodily expressions of others. On this account, social understanding is enabled by forming and following a shared rhythm of bodily movement. As discussed, autistic movement patterns significantly impact the person's ability to generate fluent movement patterns in anticipation and response to the movements of others. Thus, it becomes more difficult to generate spontaneous, fluent, 'natural,' movement patterns and even simple everyday actions may appear stiff, intellectually willed, or mechanical. Not surprisingly, such differences present a significant obstacle for the developing ability to dynamically respond to and fluently co-regulate one's movements with those of others and, importantly, to engage in processes of affect attunement. While this has not been explored qualitatively, it has been suggested that autistic movement differences impact the ability to sense and respond to the vitality affects of others.⁹⁹ This may ultimately be what is at play in autistic infants' oft-mentioned deficient anticipatory postures or lack of adjustment of their own movements in anticipation of the movements of others and also in reduced interpersonal synchrony in autistic adults.

As discussed previously, the relation between primordial feelings and affect attunement reflect this intimate relation between movement

99 ROCHAT ET AL. 2013; KRUEGER 2021.

and intersubjective development. In relation to autism, it is important to point out that primordial feelings are *expressive* through bodily movement in the same rich manner as vitality affects. Thus, they are open to the other's perception and, thus, to intersubjective attunement.¹⁰⁰ The immediate sense of one's own bodily states is thus expressed in the subtle ways in which one shapes and directs one's movements and postures. In autism, this relation between primordial feelings and bodily expressivity is evident and bears witness to the important role of primordial feelings, such as the ability to sense minute changes and fluctuations in one's bodily states and movements, and processes of affect attunement and intersubjective development. In other words – and following the theoretical account of movement proposed in this article – if primordial feelings in autism are hampered by the disturbed ability to sense one's own body in motion, so are the expressive features of primordial feelings, visible in muscle tone differences such as hypotonia and differences in movement kinematics and body postures. Consequently, such differences likely obstruct the autistic child's developing ability to attune to the movements of others, and others' ability to attune to the movements of the autistic child. Here, autism vividly demonstrates the centrality of primordial feelings in affect attunement, regardless of whether such affect attunement also involves the alignment of vitality affects. While it most often does, our point is that there is always a level of background feelings in processes of affect attunement as the basis for how we sense movement as meaningful.

This relation between the ability to *sense one's own body* and the ability to *attune to the bodily expressions of others* reflect a central point in the analyses of intersubjectivity proposed by Husserl and Merleau-Ponty. At the heart of their respective analyses of the conditions of possibility for experiencing others is the phenomenological structure of bodily self-experience.¹⁰¹ For Husserl, the experience of connectedness with another person presupposes the ability to sense

100 DAMASIO 1999, 53.

101 HUSSERL 1982; MERLEAU-PONTY 1968; 1962 [1945].

one's own body's dual structure of interiority and exteriority. While this analysis relies on the phenomenological distinction between experiencing something as object and as subject, as thing-like or animated, the experience of the other person does not arise through a mere categorical distinction. Rather, there is a reflection between one's own bodily self-experience and the experience of the other's bodily expressions. As Merleau-Ponty emphasizes, the intimate experience the infant has of their own body is translated into the experience of the other's bodily conduct:

Understood in this way, the experience I have of my own body could be transferred to another [...] giving rise to what Wallon calls a 'postural impregnation' of my own body by the conducts I witness. [...] The perception of one's body is ahead of the recognition of the other.¹⁰²

As Husserl and Merleau-Ponty suggest, sensing one's own body is at the heart of the developing ability to attune to other persons and thus of the constitution of intersubjective meaning. Returning to Husserl's point that meaning constituted in sense experience ontogenetically precedes and founds linguistic meaning, we can add that a primary form of bodily meaning is the foundation for social understanding and intersubjective meaning achieved through verbal interaction. While this point remains on a theoretical level and needs to be corroborated further, this constitutive relation in autism is emphasized by the developmental primacy of movement differences in relation to the later developed social-cognitive and communicative disturbances that have received much attention throughout the past four decades.¹⁰³ Yet, putting the qualitative dimension of movement differences on the forefront of the autism research agenda would enable a better understanding of the relation between movement and sensing in autism as movement is vital for the development and creation of a

102 MERLEAU-PONTY 1964, 117-8, 121-2.

103 BARON-COHEN, LESLIE & FRITH 1985; BARON-COHEN 2001.

sensus communis.

As the case of autism points to, and as autistic first-person narratives have suggested for decades, the immediate sense of one's own movements significantly impacts the ability to engage in smooth interactions with others. As Charles Hale describes it,

I think my movement disorder is most apparent in the fact that I am unable to respond to someone or something, when my intelligence would tell me to respond in an appropriate manner. For instance, when I should be smiling, sometimes I know that I am not smiling but may be even frowning. This causes me a great deal of pain and makes me look as though I am not comprehending when, in fact, I am crying to respond in an appropriate manner.¹⁰⁴

From a theoretical perspective, autistic movement differences not only disrupt the felt quality of one's own movements (regarding both how they are sensed by oneself and how they make themselves felt by others given their behavioral presentation); they also disrupt the immediate anticipation and sense of the movement qualities of others. Thus, a phenomenological account of movement allows us to understand the bodily and experiential basis for higher-order processes of social cognition, which have been the focus of much autism research since the 1980's. Elaborating the relation between bodily self-experience and experience and the other emphasized by Husserl and Merleau-Ponty, movement differences in autism (specifically concerning how movement is felt and sensed) obstruct the intuitive and immediate givenness of the bodily conduct of others, instituting a pervasive sense of alienation in autistic social experience. Autistic author Liane Holliday Willey vividly describes this felt dimension of the experiencing the movements of others:

I was captivated with the way their hands moved when they

104 HALE & HALE 1999, 32.

spoke, how they would bend them into shapes that looked like little buildings or twirl them about as if the hands were the message. I watched people like a scientist watches an experiment. Never did I feel like I was looking in a mirror. Always did I feel that I was here and they were there.¹⁰⁵

Qualitative research on experiences such as these is unfortunately scarce and very few studies have investigated movement differences from the perspective of autistic experience. In the few published qualitative studies on autistic movement, it is suggested that autistic persons experience a loss control over their own bodily movement and a sense of weakened stability in whole body movement and postural control¹⁰⁶ and that experiences of certain movements, such as restricted, repetitive behaviors, are often a means to create increased sensory feedback from one's own body.¹⁰⁷ As one participant described it in a study by Robledo and colleagues,¹⁰⁸ «I had an automatic urge to touch my body– rub my thighs or my stomach and chest.» It seems that bodily movement is something that autistic individuals often experience as needing to be thought out and calculated in advance, and it is difficult to maintain the rhythm and coordination needed for performing everyday actions. As one participant described it in the context of learning to dance, «I could not learn my footsteps and my hand movements at the same time. [...] Everything has to be thought out, that is what is so annoying.»¹⁰⁹

While such studies are illuminating, it is primarily from the wealth of autistic autobiographies and published first person narratives that experiences of movement have been put on the agenda in autism research¹¹⁰ In other words, we need more in-depth explorations of the meaning of movement for autistic development and experience of

105 WILLEY 1999, 42.

106 BERTILSSON ET AL. 2018.

107 COLLIS ET AL. 2022; BOLDSSEN 2018.

108 ROBLEDO ET AL. 2012, 64.

109 ROBLEDO ET AL. 2012.

110 See e.g., BIKLEN ET AL 2005; HALE & HALE 1999; MUKHOPADHYAY 2009.

connecting with others. Indeed, qualitative studies of movement often leave open a more detailed and systematic exploration of the phenomenological dimension of experiences of movement; of *how* movement is experienced on a subjective level. That is, movement is itself not recognized as a subjective structure of experience but maintained as a physical construct; as an *object* of experience rather than something intimately connected with subjective experience itself. Naturally, such basic assumptions manifest on a practical level through how autism interventions are conceptualized and designed. For example, Applied Behavior Analysis and various forms of behavioral modification methods are considered ‘treatment as usual’ in North America and aims to eliminate or reduce so called maladaptive or inappropriate behaviors and to improve desirable behaviors.¹¹¹ The main method to achieve these goals is explicitly drawn from behaviorist principles such as operant conditioning and the use of reinforcers to increase probability of appropriate behavior and decrease the likelihood of inappropriate behavior. Within such a paradigm, autistic behaviors as movements are in themselves considered meaningless phenomena devoid of subjectivity; as objective and physical constructs that can be manipulated in the name of ‘learning.’

Our account has emphasized movement as a meaningful expression of subjectivity and a cornerstone of intersubjective development. From such a perspective, we must first and foremost discover the meaning of autistic movements rather than treat them as maladaptive or inappropriate behaviors to be eliminated. As we have emphasized, engaging seriously with movement as a qualitative and felt phenomenon enables us to better understand the relation between bodily and social dimensions of autism, which are too often grouped as separate and neatly distinguishable features of autism. Indeed, the relation between symptoms grouped as ‘behavioral’ (e.g., repetitive motor movements) and as ‘social’ (e.g., deficits in use of gestures) have rarely been explored. As we have argued, understanding movement

111 KEENAN ET AL. 2015, 168.

as subjective and intersubjective already in the earliest stages in psychological development makes understandable how such motor disturbances may influence the experience of and ability to bodily respond to the social movements of others. To better understand the nature and development of autism, and importantly also the heterogeneity assumed to characterize the presentation of symptoms, much more work in this area is needed. Thus, in understanding the developmental significance of movement in autism it is paramount that we develop alternative conceptualizations of movement that are up to the task of accounting for its qualitative, subjective, and intersubjective dimensions. That infant research deals with a pre-linguistic phase in intersubjective development makes our ability to theorize movement adequately and faithfully even more essential. In autism research and the general field of developmental psychology, what is at stake is ultimately a genuine understanding of the advent of intersubjective meaning.

8. Conclusion

Affect attunement is one of the primary ways in which the infants develop meaning. Affect attunement is not only based on the vitality affects but also on primordial feelings. What we have argued here is that movement is an even more significant aspect of affect attunement than just through the vitality affects, as movement is primordial and central to primordial feelings. Movement in affect attunement occurs as more than the rather forceful vitality affects as «primordial feelings» or «background feelings» also depends on movement. Since the standard sense-modalities are 'nutritional' channels for meaning, movement carries a similar function although it lacks the receptor sites of the standard sense modalities. Movement is an irreducible modality of meaning-making. In this way, movement is a modality that is not only a foundation for, but is essential to, the process of meaning-making. It is a beginning part of intersubjectivity through, amongst

other things, its central role in affect attunement via background feelings and vitality affects. This essential aspect of movement is in danger of being overlooked when we ignore the qualitative aspects of movement and its roles in experience.

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