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Participatory sense-making in physical play and dance improvisation: drawing meaningful connections between self, others and world

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Chapter 3. Of rhythm and movement: physical play and dance as (participatory) sense-making practices

Drawing on the enactive account of cognition, I discuss here how both physical play and dance improvisational practice can be seen as (participatory) sense-making processes (De Jaegher and Di Paolo, 2007). In this chapter, I first give a short introduction to the enactive approach and the concept of participatory sense-making. I then discuss how children's physical play and dance improvisation can be seen as special forms of participatory sense-making based on five core elements: decision-making-in-action, kinaesthetic pleasure, rhythmic coordination, creative potential, and its ambiguous, open-ended nature. This is followed by some reflections on how physical play and dance improvisation bring forth worlds of meanings through dynamic interactivity (Van der Schyff et al., 2018). Finally, I press the need for future research in the interdisciplinary field of play, dance improvisation, and enactivism.

Introduction to the enactive account[22]

Most theories on subjectivity look to social cognition from a representationalist point of view (Fuchs & De Jaegher, 2009). Models such as theory of mind, theory theory or simulation theory[23] all start from the premise that the mental state of other people cannot be directly observed and therefore our mind-reading abilities have to rely on common sense or folk-psychological theory (Gallagher, 2004). In contrast, the enactive account looks at the problem of intersubjectivity from an interactive and nonrepresentational perspective (Gallagher &Varela, 2003; Gallagher, 2005; Thompson, 2007).

In the enactive account, cognition is considered an "organismic activity taking the form of sensitive interactions stretching across the brain, body, and environment" (Röhricht et al., 2014, p.13). In the enactive account, the interaction itself is the source of intersubjectivity. Social understanding is not considered a simulative, projective, or inferential process in the individual brain but meaning-giving processes are generated and transformed in the interplay between individuals. The interaction involves bodily resonance, affect attunement, interpersonal coordination and synchronization of movements and gestures.

There is a strong connection between the enactive approach and phenomenology. Varela, Thompson and Rosch consider enactivism as "a continuation of a program of research founded over a generation ago by the French philosopher, Maurice Merleau-Ponty" (1993, p. xv). According to Gallagher (2018), many of the ideas of enactivism sit easily with phenomenology. In phenomenology, consciousness and our primary relation to the world are not seen as intellectual/theoretical but as a form of bodily intentionality (i.e. not an 'I think' but 'I can'). Enactivism picks up on the notion that cognitive processes are deeply intertwined with bodily action and bodily intention. Even more,

[22] This paragraph is borrowed from the introduction paragraph of Hermans (2018).

[23] The theory of mind and theory theory are closely related. Both theories propose that our understanding of the mental states of others is based on folk psychology, that is, we make inferences about the mental states of others by "relying on an innate or acquired theory of how people generally behave and of the mental states such as beliefs or desires that cause their behaviour" (Fuchs & De Jaegher, 2009, p.468). The difference between theory of mind and theory theory, is that the first one is solely concerned with mental states of people while the theory theory also is concerned with objects/things. The simulation theory states that we do not need a theory since we can simulate the mental states of others by using our own mind (through imagination). Gallagher (2001) argues against all three theories. Instead, he proposes that we come to understand others through primary interactions, in other words, by physically relating to others and the world.

Merleau-Ponty's notion of intercorporeality[24] is further developed by enactivism and resonates with De Jaegher and Di Paolo's notion of participatory sense-making.

Enaction stands for the manner in which a subject of perception creatively matches its actions to the requirements of the situation. The term was first introduced by Varela et al. (1993) and refers to a pathway in which several related ideas come together and are unified: embodiment, autonomy, emergence, experience and sense-making (De Jaegher & Di Paolo, 2007). The first underlying assumption of the enactive approach is that the body is considered "the ultimate source of significance" (Di Paolo et al., 2010, p.42). Embodiment refers to the notion that the body is more than an instrument of the mind: it is a dynamic system that is in constant dialogue with the world. In the enactive approach cognition is not "entirely located in the head, but distributed across brain, body, and environment" (Gallagher, 2004, p.6). The second underlying assumption of the enactive approach is that a system is autonomous: its dynamics generate and sustain an identity. This is called operational closure. The third idea, emergence, refers to collective self-organisation in complex systems theory. It describes how a novel property or process "emerges" out of "the interaction of different existing processes or events" (Di Paolo et al., 2010, p. 40). Experience, as the fourth underlying assumption, is not an isolated mental act but comes into existence by being alive and acting upon the world. Finally, sense-making refers to the idea that we do not passively receive information about the world, but we actively engage and participate in the generation of meaning.

In this chapter, physical play and dance improvisation are considered self-organising, emergent activities in which experience is transformed through the dynamic coupling of two or more autonomous agents. Meaning is generated within the interaction: sense-making in play and dance improvisation is thus always a relational and situational process.

From sense-making to participatory sense-making[25]

De Jaegher and Di Paolo (2007) draw further on the five basic ideas of the enactive approach. They introduce the concept of participatory sense-making. Sense-making, according to De Jaegher (2009) is an intentional and expressive activity, i.e. an activity affected by coordinating movements in interaction[26]. Each agent involved in this interaction process contributes in his own way to the coordination and co-regulation of intentions/perceptions and movements. Even more, the interaction process itself can move into directions that are unexpected to the agents and even not-willed. This means that when we engage in interaction, not only the participants but the interaction process itself can influence sense-making.

In the enactive approach sense-making and meaning in interaction cannot be a solely individual activity: they are co-authored, inter-bodily, situated, and situational (Jensen, 2014). Participatory sense-making can be defined as "the coordination of intentional activity in interaction, whereby individual sense-making processes are affected and new domains of social sense-making can be generated that were not available to each individual on her own" (De Jaegher & Di Paolo 2007, p.13). This coordination can take on different shapes (such as imitating, mirroring, rhythmic

[24] Intercorporeality refers to the connection between bodies, specifically when it comes to the perception of another's action. Through the reciprocity between bodies, "we directly grasp the intention of another's action" (Tanaka, 2015, p.462).

[25] This paragraph (until "this joint sense-making is not a static process but involves relational dynamics") is a copy of the introduction paragraph of Hermans (2018), Joint Action and Joint Attention: Dance Improvisation and Children's Physical Play as Participatory Sense-Making Activities.

[26] The enactive approach doesn't make a clearcut distinction between sense-making (senses that make sense) and meaning-making (often associated with semantic meaning, propositional knowledge and internal representations) because they perceive cognition as embodied, situated and relational. Any type of knowledge and any type of meaning-making is the result of a living organism that interacts in an embodied way with its surroundings.

synchronization) and different modalities are at play (such as movements, gestures, language, etc.). Each participant engages dynamically in the interaction process.

Gallagher (2004) adds to this that joint sense-making is a thoroughly embodied process in which we share intentions by interacting with each other. The lived experience plays a crucial role in understanding other people's actions and intentions.

> A common intentionality emerges among the individuals as they enter into the interaction involved in a specific task […]. Their shared understanding emerges from a set of embodied movements and actions in the specific context of what they were doing, and it is irreducible to any set of mental states in one individual or even the collection of mental states found in all of them. The action, and the meaning of the action, transcends any one individual; it is generated in the interaction required for the outcome. (Gallagher, 2010, p. 120)[27]

In addition, participatory sense-making acknowledges the musical structure of our interactions. Through an expressive interactive play of intentional actions and responses, a meaningful action chain is developed. Di Paolo et al. (2010) explicitly use the term interaction rhythm, which they define as diverse aspects of the temporality of the interaction. Interaction rhythm can be observed in daily actions when we communicate to each other and the listener rhythmically coordinates his movements to the speech and movements of the speaker.

Participatory sense-making is not an on/off activity, in the sense that it takes place or not, rather it should be seen as a spectrum of participation, ranging from almost individual sense-making to whole shared sense-making activities where actions, affects and intentions are co-constructed in and through the interaction. In sum, participatory sense-making occurs in the interaction between two or more autonomous agents through the coupling and coordination of movements and intentions. This joint sense-making is not a static process but involves relational dynamics.

Physical play and dance improvisation can both be seen as activities in which sense-making is situational and interactional. Sense-making is the process in which meaning or valence emerges through our interactions with others, or with the world. Through sense-making we lay a grid over the world, we imbue the world with values and meanings (Thompson, 2007).

In both physical play and dance improvisation, we can identify three layers of sense-making: movement, affect, and attention. First of all, movement exploration is at the heart of both physical play and dance improvisation. In both activities, there is a kinetic urge – i.e. the thrive to engage fully in movement solely for the pleasure of moving. Sheets-Johnstone formulates it accurately when she stresses that "movement is in and of itself engaging, fun, and delightful, and it is engaging, fun, and delightful because it resonates in feelings of aliveness radiating dynamically through a kinetic/tactile-kinaesthetic body" (2003, p. 418). In short, physical play and dance improvisation are both 1) grounded in movement, and 2) movement itself gives rise to (mutually shared) sense-making processes through the exchange of kinetic/kinaesthetic bodily patterns.

Second, physical play and dance improvisation are affective practices. Affects are expressed through and within the qualitative dynamics of movement. It is a bidirectional process of moving and being moved, affecting and being affected. Even more, "the interaction dynamic itself creates and

[27] A daily example of common intentionality is for example when two persons carry a table or couch upstairs. This might be accompanied by verbal instructions but in most cases, the bodies adjust to each other pragmatically. Often this results in one person being in front while the other is in the back. Even more, to keep the table or couch stable, the two persons do not carry the object parallel to the ground instead the front person carries the end high and the person in the back carries the end low. As said, this is often something that the movers discover during their shared interaction, by finding the right balance, sharing the same amount of weight, etc.

constitutes an affective quality which is not pre-existent to the encounter" (Mühlhoff, 2015, p.2). Affects arise through the ongoing dynamics of moving and being moved. Physical play and dance improvisation can be seen as "dynamic affective happenings" (Sheets-Johnstone, 2009, p.379), in which sense-making is experienced in and through a creative movement inquiry.

Third, physical play and dance improvisation are attentive practices. This attentiveness includes micro-awareness of tiny bodily shifts as well as macro-awareness of the interactional dynamic. Players direct their attention to themselves, to the other players, and to the environment through active sensing. Little (2014) speaks of fine slices of attention that can occur in rapid succession or that are stretched over time. Attention is a prerequisite for the actualization of creative potential since only through active sensing (self-sensing, sensing the others, and sensing the environment) we can respond and be response-able to the continuously shifting relational dynamics. Even more, in physical play and dance improvisation, we give attention to attention. The players and dancers attend to selves, others, and the environment amid the experience. The players and dancers orient themselves within the slipstream of movements, in situations that are self-evolving and they creatively adapt to the ever-changing relational dynamics. In other words, attention draws the players/dancers in - as they attune and become sensitive to the qualitative dynamics (such as forces, intensities, contours and flow) of the movement. Attention is thus not a static phenomenon, but a dynamic phenomenon that is intrinsically connected to perception and movement.

In sum, physical play and dance improvisation can both be seen as activities that 1) take movement itself as the source for creative exploration, 2) are affectively charged and 3) require sensitivity to the ongoing qualitative dynamics of self-generated and other-generated movement (see Figure 9).

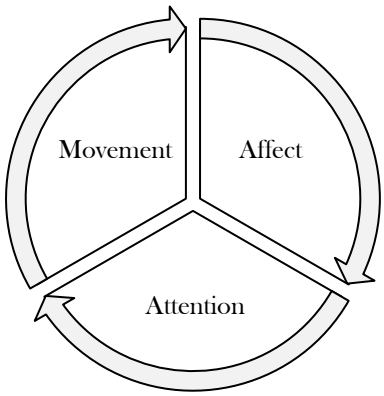

Figure 9. Participatory sense-making: movement, affect, and attention

Five additional elements of sense-making in physical play and dance improvisation

In addition to the three layers, five core elements can be distinguished in the sense-making process of both physical play and dance improvisation: decision-making-in-action, kinaesthetic pleasure, rhythmic coordination, creative potential, and its ambiguous, open-ended nature (see Table 1).

(participatory) sense-making	• a real-time process of *decision-making-in-action* • a movement practice that welcomes the playful and the joyful, and that deliberately seeks *kinaesthetic pleasure* • a diverse practice of beginners as well as expert movers that *collaborate and (rhythmically) coordinate their actions* within the temporal flow of movement • the unlocking of *creative potential* that is actualized through *an emergent set of structures and rules* • *ambiguous* and open-ended nature

Table 1. (Participatory) sense-making in physical play and dance improvisation: five elements

Decision-making-in-action

Dance improvisation and physical play are both practices in which movements are created on the spot. Decisions are made in real-time. Making a decision implies that all other options are taken aside: the event unfolds itself through a series of decisions that create a pathway but also closes off other pathways. "A constant stream of action decisions is made without delay, using present resources, and in response to current constraints and adaptive pressures." (Kimmel et al., 2018, p.5) Decisions are made along while being in the action. This requires not only action-readiness but also attunement, bodily listening and field awareness.

Players/dancers have to engage with what is presently at hand. The decision-making is therefore made "without delay, using present resources, and in response to current constraints and adaptive pressures" (Kimmel et al., 2018, p.6). Players/dancers respond to the different possibilities that appear in the moment. This means that sometimes you move along with the suggestion of another participant, while at other times you actively sculpt and re-direct the situation. To respond creatively to the moment, the players/dancers need to attune to their own bodies, other bodies and surroundings. They need to be sensitive to the relational parameters and open to the creative potential that might pop up.

Although decisions are made on the spot, this does not mean that players/dancers only make spontaneous decisions. Decisions are made "in a double loop of simultaneous feedforward and feedback" (Kimmel et al., 2018, p.52). In other words, decisions are made in the here-and-now without breaking the ties with what was and what is still to (be-)come. Decision-making-in-action is therefore always relational and contextual. Although decisions are made on the spot, they are "nevertheless context-sensitive in a way that actions require mindfulness about the in-the-moment disposition of the players" (Torrance & Schumann, 2019, p.268). Decision-making-in action is not mindless: it requires pre-reflective and reflective awareness. Even more, decision-making is not considered an internal process taking place inside the head but a coming together of self, others, and environment.

The pleasure of the flesh

Sheets-Johnstone (2003), Bond (2000) and Stinson (1997) are of the few authors that consider fun not as a byproduct but as a vital ingredient of both physical play and dance improvisation. The kinetic/kinaesthetic, tactile experience evokes in us a high state of arousal, a deep engagement (and connection) with the environment, and a sense of aliveness. We feel awake, alert and alive. According to Sheets-Johnstone (2003, p.416) movement itself is a motivating force:

> […] we can begin to appreciate how and why movement can itself be a motivating force, or correlatively from a dynamic systems perspective, how and why movement can itself be an attractor. Movement is enjoyable, pleasurable; for the moving individual, it produces a high, an elevated sense of aliveness, a delight in the kinetic dynamics that is underway.

Kinaesthetic pleasure is an integral part of physical play and dance improvisation[28]. "It is not an accessory to a main event, but the main event itself." (Sheets-Johnstone, 2003, p. 415) Movement itself is a source of pleasure, something we can all testify to when we jump, run, chase each other, roll or turn-around. It is as if suddenly the body wakes up from the daily habits of movement and finds itself back in movements that are just performed for the sake of moving. Notice for example the difference between the reaching out of the body to grab something from the top of a closet, or reaching out for the sake of reaching (extending the arms, lengthening the body, rising up). The body finds pleasure in movements that exceed the threshold of the functional and that trigger our kinetic curiosity[29].

To engage in fun is to engage fully and without concerns or hesitations in the kinetic/tactile-kinaesthetic experience. One has to throw oneself into the experience, to surrender fully and entirely, with a serious commitment to whatever may pop up. Outsiders recognize this kinetic delight instantly – "a lightness of heart, a glint in the eye, alertness, enthusiasm, and readiness for surprise" (Gordon & Esbjörn-Hargens, 2007a, p.8). Pleasure is not something superficial or peripheral. It requires serious dedication and commitment. In other words, improvisational practice in play and dance calls for serious attention to having fun (Hermans, 2018; 2019).

Coordination and interaction dynamics

Improvisation in play and dance can be done alone or in a group. In a group the relational aspect is clear from the start, but also a solo player is part of a relational web that spans between her and her surroundings.

Interaction dynamics can occur in three ways: intra-player coordination, environment-player coordination, and inter-player coordination. Intra-player coordination refers to the coordination that takes place inside the player's body/brain boundary (Torrance & Schumann, 2019). Examples are eye-hand coordination and the coordination of the whole body in complex movements such as jumping, running, and balancing. Environment-player coordination is here defined as the way the player adapts her body to the needs of the environment. Think for example of how we adapt our walking when confronted with a slippery, icy surface. James Gibson's theory of affordance (1979) is a well-known theory that explains how the body molds itself to the needs of the environment. An affordance is an "action possibility formed by the relationship between an agent and its environment" (Nye & Silverman, 2012, p.179). The physical environment (including objects) affords different actions and behaviours. In other words, the environment evokes certain action responses in us. In daily life, affordances are highly functional and goal-oriented (e.g. a toothbrush has the affordance of brushing

[28] It must be noted here that physical play and dance improvisation are not always pleasurable activities. Both can be demanding (in a physical as well as mental way): there can be social and artistic pressure and it may involve risk (in terms of potential physical/mental harm). See also page 16.

[29] Within phenomenology, joy and pleasure are associated with the "fulfilment of an intentional tendency" and with "the dynamics of accomplishment of activities that are considered to be aims in themselves" (Husserl, in Summa, 2020, p.417). Summa associates joy and pleasure with playful activities (such as physical play and dance improvisation). However, it goes too far to state that play and dance improvisation always provide pleasurable experiences. Throughout the playful event, the participants move through different states that can be pleasurable or not. Pain, discomfort and frustration can all be part of this experience.

your teeth) while in improvisation affordances can be imbued with new values and actions (e.g. the toothbrush becomes a telephone or a baton/conducting stick).

Inter-player coordination refers to the coordinated interaction between two or more players. Inter-player coordination involves bodily resonance, affect attunement, and interactional synchrony. The term affect attunement originates from infant development and psychodynamic psychotherapy. The term was first coined by Daniel Stern (1985) who describes affect attunement as the process of expressing and communicating emotional states through rhythmical bodily repetition, flow, vocalizations and gestures. The term interpersonal synchronization also finds its roots in the context of early childhood communication (Condon & Ogston, 1971; Condon, 1975; Malloch & Trevarthen, 2008). In developmental psychology, interpersonal synchronization refers to the rhythmic coordination between infant and caretaker in which not only movements, expressive gestures and vocalizations are shared but also affects. Gallagher (2005) describes interpersonal synchrony as the coordination of perception-action sequences that result from the bidirectional coupling of sensorimotor systems. It involves the rhythmic co-regulation of gestures, face or vocal expressions and movements. Inter-player coordination requires a constant negotiation of physical interactions through a delicate balance of give-and-take. In sum, inter-player coordination refers to the relational dynamics of social interactions. Through bidirectional rhythmical coupling, the participants co-regulate their actions and intentions.

Creative Potential: Moving within Constraints

Creativity is usually defined as the "ability to produce something novel and useful" (Malinin, 2019, p. 9). Traditionally, creativity is seen as a cognitive and intra-individual process (Sawyer & DeZutter, 2009). Recent theories on creativity however point to the distributed and emergent nature of creativity. This is in line with enactivist and 4E accounts of cognition and action. "Creativity does not begin with an idea in the head that is subsequently realized; it emerges through interactions with others and artifacts of the material environment." (Malinin, 2019, p.8) Creativity in this respect is considered an embodied process where novel insights emerge as responses to changing situational cues. "Creativity is situated practice; it involves embodied experiences and is embedded in socio-material environments." (Malinin, 2019, p.9)

A creative process can be a group process or an individual process. In both cases, it is a situated practice. A child who is playing alone, or a dancer who performs an improvised solo, is still part of a self-organising dynamic system in which creativity emerges as a novel response to changing, situational cues. The player is sensitive to situational cues, she responds to the temporal micro affordances that pop up in her surroundings. Her engagement with objects, materials, and the environment provides a generative source for creative interaction.

In group improvisation the same creative mechanisms are at work, however, this time creativity is also distributed over and across the players. Keith Sawyer and Stacey de Sutter (2009, p.82) refer to this as "distributed creativity", i.e. the process where groups of individuals collaborate to generate a creative product. Distributed creativity has four characteristics (Sawyer & De Sutter, 2009, p.82):

- The activity has an unpredictable outcome, rather than a scripted, known endpoint.
- There is moment-to-moment contingency: each person's action depends on the one just before.
- The interactional effect of any given action can be changed by the subsequent actions of other participants.
- The process is collaborative, with each participant contributing equally.

In other words, the interaction between the players is not only the medium for action but also the source of creativity (Kimmel et al., 2018). Even more, within a group, the players have to constantly negotiate with each other, in a process of give-and-take that requires an ongoing sensitivity and responsivity to the movements of self and others. At all times, they must keep the connection alive. In collaborative improvisation, both the creative process and the creative product are emergent properties of the interactions. This does not mean that creativity is always distributed evenly among the participants: sometimes a creative impulse is initiated by one person and at other times it emerges from the collective.

Finally, constraints are necessary within the creative process, but too many constraints can inhibit creativity (Malinin, 2019). There can be situational constraints, interactional constraints as well as skill, task-based and bio-mechanical constraints. Freedom and constraint are intertwined: a constraint can limit or enable new movement potential (Da Silva, 2017). Take for example an instruction such as 'move to the other side of the room while your left foot does not touch the ground'. This instruction certainly limits the number of movement possibilities (no walking, running, galloping, crawling, etc.) but it enables other ways of moving (rolling, crawling, hopscotching). In an improvisation, some constraints will be set from the onset, but most of the constraints will emerge during the creative process. Players have to move through an ever-changing landscape of constraints, that pop up while they move along. These constraints help to limit the infinite amount of movement possibilities, reduce the degrees of freedom, and as a result foster creativity. However, too many constraints can narrow down the number of possibilities in such a way, that only a few options remain. Improvisational creativity thus requires a delicate balance between freedom and constraints.

Sense-making as an ambiguous and open-ended process

Both physical play and dance improvisation are creatively open-ended activities: process and outcome are not pre-defined, there are a limited set of constraints and as a result, new meaning and valences may arise. There is no logical ending point, no predetermined narrative and no planned order of meaning (De Valk, 2015). The purpose of dance is dancing, and the purpose of play is playing.

It must be noted that both physical play and dance improvisation can take on different appearances (see Table 2). It is therefore better to speak of a spectrum of practices that range from structured/pre-arranged (at one extreme) to unstructured/free (at the other extreme). In the case of physical play, challenges and physical games (such as tag game or hide-and-seek) are located at one end of the spectrum. In the middle of the spectrum, we can find physical play activities that are less structured and more open-ended. Building a den or rough-and-tumble play are examples of physical play that have some rules and constraints but that are still open-ended. Finally, there are also types of physical play that are entirely open, free, and spontaneous. Free play is usually defined as "the type of play the child uses throughout the day in various forms. Free plays are the chosen, proposed, child-initiated plays without adult intervention" (Catalano, 2018, p.2). Make-believe play, molding clay, playing on a playground or outdoors with activities such as running, climbing, swinging are all examples of free play.

In dance improvisation, there is a similar continuum that ranges from highly structured (e.g. working with a score) to free (e.g. ecstatic dance, authentic movement practice). In the middle ground, one can find dance improvisation that welcomes new, radical movements while at the same time it

operates within a certain set of constraints (such as open form composition and contact improvisation)[30].

Structured play/dance improvisation	⟷	**Free play/ dance improvisation**
Structured		Radical, chaotic
Finite		Infinite
Fixed rules		Few rules that can be adapted
Predefined		Spontaneity
Challenge, competition		Sensation of play, expression

Table 2. Characteristics of structured and free play/dance improvisation. Adapted from *"Designing for open-ended play*" (p.33), by L. de Valk, 2015, Doctoral thesis, Eindhoven University of Technology.

Physical play and dance improvisation can both be seen as self-organising processes "governed by the dialectics of expansion and exhaustion of possibilities. Its freedom lies in the capability that players acquire of creating new meaningful (not arbitrary) constraints" (Di Paolo et al., 2010, p. 79). Although the players/dancers operate within certain constraints, the sense-making process itself remains open, fluid, and instable. This is because physical play and dance improvisation are both creative movement practices. Martha Davis (1975, p.84) states that dance and movement in themselves are "far too complex, to be reduced to fixed meanings. The myriad combinations and sequences of movement variables as they continually occur militates against this; different combinations yield different nuances of meaning despite of certain general "threads" […] movement continually reveals an unlimited variety of patterns and combinations of its finite parameters." Even more, dance improvisation and physical play bypass language - they rest on semantic indeterminacy - and as a result, meaning and sense-making are foremost kinetic and kinaesthetic.

As a result, sense-making in dance improvisation and physical play is inherently ambiguous. They are considered meaningful activities – yet it is impossible to point to their specific meaningful content. The expressive content is non-specific, instable, and ephemeral by nature. Sense-making, therefore, remains in the kinetic/tactile-kinaesthetic realm. We experience its value through mutual affiliation, through the sharing of corporeal experiences. Ian Cross[31] (2014) uses the term floating intentionality to describe how sense-making and meaning are intimately bound to the contexts in which they are experienced.

In sum, physical play and dance improvisation can both be seen as special forms of participatory sense-making because (Sheets-Johnstone, 2003, 2009: Kimmel et al., 2018; Sawyer & DeZutter, 2009):

- Movement itself is a motivating force and a vital source for interaction.
- Both physical play and dance improvisation produce an elevated sense of aliveness (pleasure in the flesh).
- Sense-making arises through the coordination of rhythm, movement, and intention.
- Affect and movement are dynamically congruent: as a result, the interaction is affectively charged and intentions are expressed in a bodily way.

[30] Contact Improvisation (CI) can be described as a practice of two or more bodies exploring movement with each other (in terms of weight, touch, and kinetic/kinaesthetic awareness).). Open-Form Composition sits in-between improvisation and composition: it includes the openness of improvisation but also embraces the closure of form associated with composition (Da Silva, 2017). Constraints in CI and Open-Form Composition usually derive from the interaction as well as from bodily constraints (e.g. degrees of freedom of a movement, gravity).

[31] Ian Cross introduces the term 'floating intentionality' in the context of music but the term is also applicable to dance and play.

- Decisions are made within the action, and therefore highly situational and interactional.
- The interaction itself is a creative source for movement exploration.
- Creativity is distributed over and across (autonomous) participants.
- Both activities are ambiguous and transformative, i.e. both physical play and dance improvisation are capable of imbuing a concrete, physical event with new, alienated meaning.

Some closing thoughts

In this chapter, I have identified three layers (attention, affect and movement) and five characteristics of both physical play and dance improvisation (see also Figure 10). In both activities, there is:

1) a real-time process of decision-making-in-action;
2) an elevated sense of aliveness (kinaesthetic pleasure);
3) rhythmic coordination and synchronization;
4) creative potential that arises in-between freedom and constraints;
5) ambiguity and fluidity in the generation of meaning.

Out of this follows, that the sense-making process in physical play and dance improvisation is fluid, instable, and meaning emerges through a complex interplay between self, others and environment. Even more, meaning is first and foremost experienced in a corporeal way, it comes into being through the dynamic interaction of autonomous agents with their physical, biological, and sociocultural surroundings.

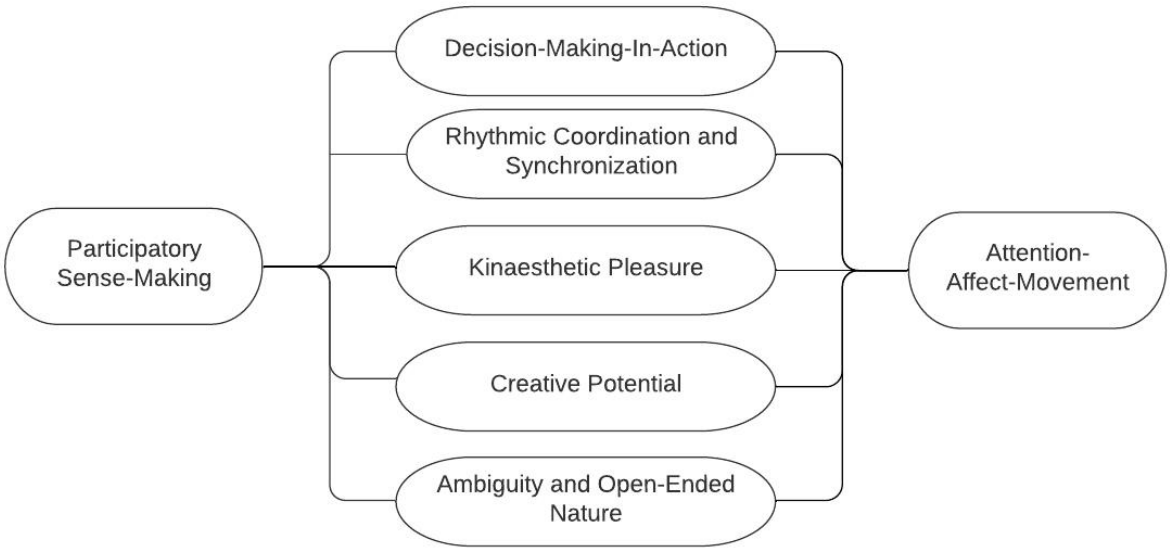

Figure 10. First model of participatory sense-making in physical play and dance improvisation

In this chapter, I hope to have shown that both physical play and dance improvisation are indeed good candidates to explore ambiguous and fluid forms of (participatory) sense-making. In both dance improvisation and physical play, "cognition is tightly coupled to the circumstances and yet capable of producing novel meaning as a result of a dialectic process of value-generation[32]" (Di Paolo, 2007,

[32] Value generation is an intrinsic part of the sense-making process of all living organisms. Values arise when living organisms load a specific situation with meaning. Where traditional theories in cognitive science perceive values (i.e. cognitive appraisals) as an internal part of the cognitive structure of an agent, enactivism considers value-making as a context-dependent and embodied activity that is only partly under the control of the agent. For enactivism, values emerge

para.2). The body in both physical play and dance improvisation is a body-in-action: meaning is generated and transformed through creative movement exploration. Both activities put the lived experience to the front. Not only the qualitative movements dynamics (effort, shape, space, and rhythm) but also intentions and affects are shared and coordinated between the participants. Meaning is generated and transformed within the interaction process.

This brings me to a first conceptual model of physical play and dance improvisation. The model (see Figure 10) will be taken along throughout the different phases of my artistic research. In chapters 11 and 12, this conceptual model will be adapted and revised.

through interaction with the world and are therefore tightly bound to lived experience. Di Paolo et al. (2010, p.18, original emphasis) define value as "*the extent to which a situation affects the viability of a self-sustaining and precarious process that generates an identity*". In other words, values are generated in the dynamic interaction of a living organism that wants to maintain its own autonomy/identity (also referred to as autopoiesis). Value is what "affects the organism's autopoietic organisation" (Di Paolo et al., 2010, p.15).