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Forms of Vitality Play in Infancy

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Abstract In this paper we report a qualitative study based on the constant comparative method to initiate the systematic study of forms of vitality play. This is an unnoticed non-figurative play frame linked to early social play and temporal arts in which child and adult elaborate the dynamics of their own movements and sounds in a repetition-variation form. In the introduction we present the theoretical underpinnings and the sporadic observations we have done in previous studies. Then, by the iterative observations of the recorded material of a longitudinal case study on play during the third year of life, we generated the general category of forms of vitality play and four subcategories of display modes of forms of vitality play (improvised forms of vitality play, ritualized forms of vitality play, forms of vitality play combined with pretend play, and forms of vitality play combined with role playing) which are illustrated with descriptive narratives. We discuss the properties of the developed categories, the limits of the present study, and the need to continue systematizing the research on this playful activity.

Keywords Play · Forms of vitality · Temporal arts · Movement · Musical play · Infant development

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Since a considerable amount of time now, there is an interactive kind of play that has been calling our attention. It is a recreational activity where the focus of play is set on the quality of executed sounds and movements, in detriment of any figurative content. In one occasion, we were surprised by the aesthetic quality of the manipulation of sounds and movements with no representational content, made by a dyad composed of an adult and a 2 year old child (Español 2005, 2007). Later on, while running a longitudinal case study on play during the third year of life (Español et al. 2010), we noticed the frequent appearance of similar play situations throughout the sessions. We then decided to start a systematic study of this play using the material collected in our longitudinal case study on play during the third year of life.

It's been almost a decade ago that we observed this children's play for the first time, and that supported in concepts coming from studies on early interactions, music psychology, and communicative musicality we have thought about its two essential traits: its non-figurative character, and its link with temporal arts. However, it was inspired by Stern's concept of *forms of vitality* (2010) that we found a clearer theoretical frame and an appropriate name for it: *form of vitality play*. Forms of vitality play is a type of interactive play where child and adult, in a pleasant and organized fashion, actively manipulate the vitality forms of their own movements and sounds. To address its divulgement we will introduce the theoretical foundations of forms of vitality play – reciprocity, forms of vitality and early social play– and we will offer our first conceptual approach to forms of vitality play based on our previous sporadic observations. Once this has been done, we will present our first qualitative study on forms of vitality play.

The Theoretical Foundations of Forms of Vitality Play

Reciprocity

Reciprocity characterizes all of our interpersonal encounters. In these moments of meeting, behavior is influenced by each other's presence. Locating reciprocity in the center of our interpersonal world arises from the adoption of a comprehensive second person approach on it. The second person approach is part of the framework of embodiment in which the emotional world, the perceptual processes, movement, and action take center stage for the understanding of psychological processes. In this framework, our interpersonal world is mainly based on perceiving others directly, the experience of "making together", and dynamic and reciprocal exchanges. According to Reddy (2008), being in contact with another person presupposes an assembling between exteroperception and proprioception: perceiving someone directing their attention and action to oneself inescapably involves the proprioception of our response to them. A second person approach puts the whole body in reciprocal exchange and not only its partial aspects –the face or hands– as do those heirs prospects of the *linguistic turn* in social sciences (Sheets-Johnstone 2008, 2009). We can perceive the other's feelings and intentions in their postures, movements, facial expressions, gestures, vocal intonations, and actions (Gallagher 2008; Gallagher and Zahavi 2008). In the interpersonal context, the expressive aspects of the behavior of one another –such as tone of voice, smile, or tone muscle– are perceived as directly meaningful, forming the basis of

a corresponding reaction that acquires full meaning within the interaction. What a subject does evokes a sensible answer on the other person in a way that actions and reactions get the traits of reciprocity (Gomila 2003, 2007). This we-mode-in-interaction is irreducibly collective (Di Paolo, De Jaegher and Gallagher 2013). Reciprocity is a key component of our relationships and one whose value cannot be overstated in early social play. In early social play, adults in resonance with babies practice certain "strategies for reciprocity" such as the varied repetition of small units of movements and sounds, resembling patterns that are present in the temporal arts (Español 2014).

A second person approach is compatible with the dialogic perspective in early interaction studies that emphasize the building together of dialogical forms to be shared by the partners, and the emergence of innovation. In the building together of dialogical forms a mutual knowledge is achieved that serves as a background for the dyad to negotiate new elements that can be seen as emerging figures bringing novelty to what has been established. (Lyra 2007, 2009). The second person approach specially resonates with dialogical views that highlight the dyad's complete corporal exchange (not only face to face) and do not limit its temporal organization to turn taking. In this vein, Garvey and Fogel (2007) describe dialogue as mutually co-regulated movements that emerge when two (or more) bodies encounter one another. In this sense, dialogue is a multi-faceted process that looks well beyond typical notions of conversation, parlance, and exchange. Co-regulation appears to be related to the personal experience of resonance or being with the other. There is an active and continuous process of co-being: whether it is co-being in linguistically-dominated dialogues, in kinesthetically-dominated dialogues, or both. According to Fogel and Garvey (2007) co-regulated communication occurs when co-action is coordinated (both sequential and co-occurring) and partners are open to mutual influence. Early social play is clearly a co-creative form of communication that shows a spontaneous co-regulation. The actions of the whole body of adult and infant –arms, face, posture, voice– are in continuous motion, in continuous mutual adjustment to create a coordinated joint activity that emerges from this dynamic co-regulated interplay (Garvey and Fogel 2007).

The multi-faceted process of dialogue is organized in frames that dynamically emerge, get settled, and change. Frames are coherent themed co-action pieces taking place in a specific location. They involve mutual co-oriented forms between participants (Garvey and Fogel 2007). According to Fogel and DeKoeyer-Laros (2007), frames are regularly recurring communication patterns involving coordinated actions, and shared cognition and emotion: specific parent-infant games like peek-a-boo, tickle, or playful activities that incorporate objects such as book reading, bathing, mealtimes, bedtime rituals, and the like.

Forms of Vitality

Forms of vitality is the term proposed by Stern (2010) to capture the way in which the human mind deals with dynamic experiences, crucial to interpersonal encounters and the temporal arts. It is not an easy concept to define and attempts made to conceptualize it seem to be vague or diffuse; however forms of vitality are clearly available to experience and directly observable. Vitality forms are linked to other propositions that gesture a pre-reflective affective dimension of experience -as Gendlin's *felt sense*,

Ratcliffe's *existential feelings*, or Damasio's *background feelings* (Colombetti 2009). Damasio (2003) assumes that background feelings are coextensive with vitality affects; however Stern (2010) considers there is an important difference between them since background feelings belong to the domains of emotion and sensation, while forms of vitality don't. Background feelings refer more to the overall feel of the functioning and changes in the inner state of a system at a given moment, while vitality dynamics refer mainly to the shifts in a force felt to be acting during an event in motion, and focus on the profile of the fluctuations in excitement, interest, and aliveness.

Stern has attempted to define and describe the characteristics of the felt experience of vitality dynamics throughout his whole body of work. Amongst his many observations of subtle but relevant phenomena occurring in the parent-infant relationship, the issue of vitality is one he addressed since his earliest work. With the theoretical construct of forms of vitality, he reorganizes and extends his ideas about the temporality and intensity of human dynamic experience:

I have been concerned with the dynamic aspects of experience over many years. Along the way, different terms have been used for this aspect, including "vitality affects", "temporal feeling shapes" (…) In this book, I gather all of these terms together under the more enclosing term "dynamic forms of vitality". This adds "force", "movement", "space", "directionality" and "aliveness" to the previous discussion of time and intensity (Stern 2010, p. 17) .

The engine operating this change is the growing interest in movement that emerged during the last decades in embodied psychology and social sciences in general. It is a deep theoretical change that Sheets-Johnstone (2009) has come to call *corporeal turn* or *movement's primacy*.

Stern (2010) sets the dynamic experience of movement as the original source of psychological life. Movement, and the propioception experienced with it, are the earliest manifestations of being animate, and provide a primary sense of aliveness. When describing what characterizes it, Stern came up with the idea that vitality has forms. These forms emerge when the experiences of movement, and what Stern calls its daughters –time, force, space and directionality/intentionality– come together all at once. A form of vitality is a *Gestalt*, a spontaneous integration emerging from holistic experiences of movement and the above mentioned elements that come with it. This fundamental dynamic pentad seems to be the way the mind has been designed to grasp dynamic events. The perception of vitality forms is defined as the felt experience of force in movement with a temporal contour and a sense of being alive, of going somewhere. There is a primacy of movement in the perception of vitality forms.

Forms of vitality are modality non-specific. They do not belong to any particular content but are generally associated to a specific one (e.g., emotions, physical or mental movements, actions, a sequence of dance steps or sounds, etc.) They differ from sensations, which are modality specific (they originate from specific sense organs in the body), and from emotions, which are one of the possible contents to be shaped into the dynamic experience of a form of vitality.

Forms of vitality can be grasped from experiences and can be directly observed in the behavior of others. They concern the "how", the manner in which things are done. In relation to action, Di Cesare et al. (2013) have recently suggested that besides the goal and the intention of the performing agent, vitality form is a third aspect an observer may capture when seeing an action done by another individual. Vitality forms

characterize the style of an action and are detected on the basis of movement dynamics. In the mentioned study, they used functional magnetic resonance imaging (fMRI) to identify the brain areas underlying the recognition of vitality forms during the observation of actions done by others. Participants were presented with a pair of video-clips showing interactions between two actors performing different actions (i.e. giving a mug) that could be executed with two vitality forms: energetic or gentle; finding that the somatosensory-insular-limbic circuit could be under the observers' capacity to understand the vitality forms conveyed by the observed action. They suggest that vitality forms represent a specific aspect of movement processing, subserved by anatomically and functionally distinct areas from those described for emotion processing. These results are consistent with Stern (2010) arguments in favor of the independence of forms of vitality from other affective phenomena, endorsing the need for further studies on the matter.

Forms of vitality are fused to a content; since they can be extracted from that content and transposed to another, they play a major role in situations of *affect attunement* (Stern 1985) or *vitality form matching* (Stern 2010). Affect attunement is a partial and purposely selective kind of imitation. Dynamic features are faithfully imitated but using a different content in a different modality. For example, a 9-month-old child is knocking a toy with his hand establishing a constant rhythm and the mother joins in interaction by falling into that same rhythm saying 'caaa-bam'; the 'bam' sound matches the child's knocking, and the 'caaa' sound follows the preparatory actions of raising the arm and keeping it up in the air for an instant before the tapping occurs. In this example offered by Stern (1985) we can observe the matching object is not the open behavior but its rhythm. External conducts to be matched differ in form and modality, but are exchangeable as manifestations of a unique and recognizable internal state: the affect or the form of vitality. Affect attunement is what mothers do when they want to show their baby that they share what the infant is feeling. It is based on the matching and sharing of dynamic forms of vitality across different modalities. Sharing another's vitality forms, Stern (2010) concludes, is probably the earliest, easiest and most direct path into the other's subjectivity.

Through affect attunement Stern (2010) links his early interaction studies with those in *communicative musicality* (Malloch and Trevarthen 2009). He argues communicative musicality is largely based on the coupling of vitality dynamics between people. Being with another is accomplished by sharing vitality's dynamic flow.

Recently, M. R. Rochat et al. (2013) investigated the capacity to recognize similarities and differences of actions characterized by same or different vitality forms, finding that unlike typically developing individuals, individuals with autism reveal severe deficits in recognizing vitality forms, and their capacity to appraise them does not improve with age. This makes them a newly recognized trait marker of autism.

Stern's thinking on the existing resemblance between early interactions and the temporal arts is crucial to understand his ideas on vitality forms. Since his early work, Stern (1985, 2000, 2004) has considered the baby's experience in early social play as resembling the adult's experience in non-figurative temporal arts (dance and music). He supports the idea that the ability to express and understand vitality forms is already present in infancy. More than once, he has pointed out that a baby perceiving their parent's behavior, a non-figurative dance spectator, and a music listener, are all in a similar position. The infant's interpersonal experience, as well as the adult's experience

with non-figurative temporal arts, is a constant becoming of dynamic feelings difficult to put into words, which can only be described by means of dynamic terms like agitation, progressive dissipation, fleeting, explosive, among others. Stern described them as activation profiles, patterned temporal changes in intensity, sensations, and hedonic tone; and he paid special attention to the way they manifest in early social play and in the temporal arts, given they are both contexts where affects become particularly evident.

Forms of vitality are an amodal experience where a diversity of sensations coming from different modalities unite depending on their activation profile. In this manner, if the mother says 'all right, all right' while harmonically caressing her baby's cheek; the baby puts both actions together as long as they share duration, initial strength, and final abandonment. From both stimulations (tactile and auditory) the same vitality affect experience will arise. In adulthood, the diversity of sensations will come from the extended spectrum of all our experiences, especially from experiences with time-based art.

Forms of vitality are a fundamental aspect of time-based art performances. Temporal arts take place in real time; in contradistinction, language based arts (or figurative arts) –traditional theatre, fiction and poetry– are usually driven by the narrative process and take place in both real and narrative time simultaneously. The arts show vitality forms in a relatively purified manner: the dynamic features of a performance have usually been amplified, refined and rehearsed repeatedly. Time-based arts -or non-figurative arts- are largely about the dynamics of experience. They could never dialogue or collaborate between themselves without vitality dynamics. Together with early social play, temporal arts share the same backbone: the *repetition-variation form*. This will also be the backbone of our concept of forms of vitality play. The form repetition-variation helps all these situations to maintain the arousal level, while modulating, tickling, and momentarily playing it off.

Early Social Play and Forms of Vitality

Early social play is a frame where forms of vitality become evident. Play with movement and the sensations it brings are amid the earliest diversions adults offer to their babies: they lift them up, cradle and toss them moving their arms and legs around. Adults offer patterns of sound for vocal play when they click their tongues and lips, and pair these activities with tickles, rocking, and patting. Sounds, facial expressions, and movements are all resources adults use to hold a baby's attention, generating expectation, driving the baby to different levels of arousal, some impossible to be achieved in solitude (Stern 1985). Although parents are the initiators of these amusing activities, the baby also participates by answering and regulating the adult's actions. By directing their gaze towards the adult or looking away, they manage to influence those playing with them, regulating the amount of stimulation received (Garvey 1977). In the time period from roughly 2 ½months to about 6 months of age the baby's repertoire starts to include social vocalizations and facial expressions in response to parent's behavior. The baby becomes a partner for social play (Stern 1985, 2010). Sometimes, adult and infant engage in routinized interactions typified by unpredictable vocalizations, expectations and facial expressions, as in a game of peek-a-boo (Bruner and Sherwood 1976).

Stern notices that parents are a "sound–light show", a spectacle to play upon their baby's state of arousal. As a stimulus gets stronger, the arousal evoked gets higher. If the stimulus strength is too low, the infant will not be aroused enough, remaining uninterested and inattentive. When a stimulus is too strong and the arousal too high, it is repelling and the infant will try to turn away from it. The baby will be optimally aroused to play and be happy in the period a short time before he gets over being stimulated. To keep the baby in this optimal play zone, parents must adjust their behavior; they have to modulate the forms of vitality performed.

The feelings that run from excitement to quietness, tension to relaxation, characteristic of early social play, are the same feelings that music and dance express with mastery (Stern 1985, 2000). In fact, as shown by Trevarthen (1999/2000), early social interactions are based on rhythm, variations in pitch, and dynamics. All these are features that early social interaction and music (and the temporal arts in general) have in common, which promote the development of intersubjectivity skills. It has been observed that until the age of 2 months, turn-taking is established as a slow *adagio*, and that a state of *being together* is achieved with very simple resources. Malloch (1999/2000), for instance, when analyzing vocal exchanges between a six-week-old baby girl and her mother, found a particular, repeated vocalic imitation on the mother's side: after each one of the utterances the baby made, the mother's three timbre dimensions lowered, producing a baby-like voice. By using that single aid, she was signaling to the baby that she was there with her, listening to her, attentive and willing to engage. The time shared by the dyad while playing vocal games accelerates to an *andante* pace towards the middle of the first year. Engagements become more animated tending to be more playful than proto-conversational (Trevarthen 1999/2000). At this age babies are remarkably musical: they are attracted by rhythmic melodies; they respond to changes in pulse, intensity, pitch and timbre; they attentively notice vocalic rhymes that stress a culminating point and a phrase conclusion (Trevarthen and Reddy 2007). Concomitantly, parents use songs, chants and humming to entertain, distract, calm and regulate the excitement of the baby. These engagements of fluid reciprocity, of *feeling with* the other respond to what Malloch and Trevarthen (2009) call communicative musicality: our ability to couple with the other's sound and motor gestures. In fact, early social play is conceived of as a case belonging to the broader phenomena that together compose communicative musicality.

Equally important as finding an absolute stimulation level to sustain the baby's attention, are the vitality forms used in arriving at a given strength and in shifting it up and down. Babies habituate rapidly, they respond less and less to a stimulus that is repeated, even if that stimulus was adequate the first time and aroused the baby optimally. By the third or fourth time parents do the same thing the baby will be disinterested. Habituation determines the basic structure of social interactive play with babies. To get around habituation and avoid a fall-off in the baby's arousal, parents must almost constantly change or vary their stimulation. "The result is a theme-and-variation format of vitality forms" (Stern 2010, p.108). The repetition-variation form is a feature we find at the core of adult-infant interaction and music (Imberty 1997). This structure is crucial when trying to extend early adult-baby social play in time, where a climate of mutual enchantment prevails. Maternal behavior uses repetition in every possible modality of expression: vocalization, movement, and tactile stimulation. But what a mother does is not repeated in an identical manner: she makes subtle variations

in speed, suspense, vocal accompaniment and melodic contour in such a way that babies can predict what comes next, avoiding habituation or boredom (Papoušek 1996; Stern 1985; Dissanayake 2000). By using the form repetition-variation, adults elaborate multimodal performances whose sound/kinetic composition and expressive resources become evident when analyzed with theoretical and technical tools that come from the study of movement in dance, as well as studies of expression in the field of music execution (Español and Shifres 2009; Martínez and Español 2009). This way, early social play, dance, and music not only share the experience of temporal feelings as already indicated by Stern but also certain forms of sound and movement organization, and some expressive resources.

Early social play shares relevant features with dance and music. In the new term used by Stern (2010), early social play occurring during the first months, constitutes play with forms of vitality:

> Some games are almost purely *a play on vitality form* [italics added] e.g. sudden almost explosive movements of the mother to tickle, or progressively slowing down her movements to tease anticipation and ratchet up excitement while preparing for the "punch line", or staccato patting to increase arousal, or slow contouring movements to calm. There is a whole world of vitality forms to play with (pp. 108–109).

However, "a whole world of vitality forms to play with" at this point in life is only available to the adult. In early social play adults are the ones manipulating the events of the dynamic pentad through the form repetition-variation, and the baby participates primarily as a receptor. Our concept of forms of vitality play involves the child's active manipulation of forms of vitality. For this reason, we don't identify early social play with forms of vitality play. Early social play is an antecedent of forms of vitality play.

Forms of Vitality Play: First Approach and Previous Sporadic Observations

Early social play and temporal arts performances are two extremes of our lives. Which is the ontogenetic path that links the (baby's) perception of vitality forms with the (adult's or artist's) ability to manipulate them? We believe it can be traced by continuing Stern's work, especially by observing whether some kind of play involving forms of vitality extends throughout development. He thought that without vitality forms the exquisite fine-tuning of interpersonal interactions would not occur, nor would creative artistic interpretations. Hence, observing whether children can transcend the perception and participation of forms of vitality, and grasp how to play with them is imperative in order to unveil our human way of being in the world.

Our hypothesis is that early social play continues to develop during early infancy in what we have come to call forms of vitality play. The ability to manipulate or elaborate vitality forms has to be acquired with development, and interactive play is certainly a privileged context for a safe rehearsal. This manipulation consists in taking some of the five events of forms of vitality (movement, time, force, space, and intention/direction), and elaborating them according to a repetition-variation form. Also specific features of sound (such as melodic contours or timbre) can be manipulated by the child according to a repetition-variation structure. In early social play and forms of vitality play partners share a form of dialogical exchange. The major difference between them is that the first

one is clearly guided by the adult while the latter is not. In early social play the adult is the only one capable of manipulating vitality forms by means of the varied repetition of his own movements and sounds. Later on, on the basis of already constructed shared forms of social play, the child assumes the role of innovating by "manipulating" the forms of vitality. In this manner, the dyad takes part in a new frame: forms of vitality play, where both parts get to manipulate vitality forms letting novelty emerge from their almost symmetrical exchanges. In a few words, the cradle of forms of vitality play is dialogical exchange. In early social play babies just experienced the manipulation of some of the pentad's elements made by adults to keep the interaction active; in forms of vitality play, in dialogical exchange with the adult, the child becomes a juggler of the pentad's events.

Although some studies on early social play have considered movement, they were limited to describe it briefly. Instead, the concept of forms of vitality brings movement to the forefront. Some sporadic observations we've made indicate that when special attention is paid to movement, an unnoticed kind of play in which the child actively manipulates the dynamic pentad's events come to light.

For example, Español (2005, 2007) analyzed a movement and sound based play between an adult (the researcher) and a 1 year, 10 months old child. The game consisted in both participants moving a spring forward, stretching and shaking it in unison. Each one of these movements was associated with a level of intensity (soft/strong) and speed (fast/slow). Play was organized in the form of repetition-variation: movements were continuously repeated but always in a different manner. When the adult incorporated sounds like 'shhhhh' while slowly bringing the spring towards her, the child responded by slowing the movement down even further; if shaking the spring was an exciting movement already, when the adult incorporated a sound like 'tacataca', the child bursted with laughter. Both, child and adult, made slow and soft, fast and explosive movements in unison, incorporating a diversity of vitality forms. Furthermore, the sounds added by the adult and immediately incorporated by the child were matching forms of vitality (behavior intensity and duration profile), which brought a sense of communion and allowed the interaction to continue with added depth.

The spring play described above is a fine example of what we are presenting in this work: the dyad skillfully extracts some of the five events of forms of vitality (movement, time, force, space and intention/direction) and elaborates on them according to a repetition-variation structure. This non-figurative dialogical exchange (representations are not present) does not fit in any play classification in current literature. It is a fine example of forms of vitality play. It relates to early social play and the temporal arts: in all three, the activity is focused on the manipulation and elaboration of forms of vitality; in all three, the backbone is the repetition-variation form.

In the spring play, the dyad's movements appear more dazzling. They are what give structure to the play. We have as well observed other play situations in which, besides the dynamic pentad, specific features of sound (such as melodic contours or timbre) are manipulated by the child according to a repetition-variation structure. If one pays close attention to sound, some of these cases could be described as *musical play*, in as much as children develop a series of discrete tones and adjust to an underlying musical pulse.

In the strictest musical sense, the adjustment to an underlying pulse is the distinctive feature of musical play. Babies have been known to carry this out by the end of the first year through the mother's performance of songs and/or nursery rhymes (Merker 2002). Shifres and Español (2004) highlighted that although this is the most idiosyncratic

feature of musical play, other musical attributes -like a given collection of discrete pitches- can emerge when the dyad's intention is to synchronize. Child singing is another recognized musical play in infancy. Traditionally, the performance of *standard songs* has been distinguished from that of *invented songs* (Barrett 2006; Welch 2006). Bjørkvold (1992) described the apparition of the first individual invented songs around the first year of life. These are "fluid/amorphous" songs arising from babbling and vocal play, characterized by *glissandi*, micro-intervals, and free rhythms. Later, the child increasingly incorporates musical forms that belong to his own culture, adapting and shaping standard songs to his own purposes of playing, expressing and communicating. He found that in contexts of play children use both cultural and invented songs. In brief, in musical play the child can adjust their actions to a musical pulse in familiar melodic contours (singing and dancing invented or familiar songs.)

In the field of communicative musicality, the study of musical play has recently expanded. Bannan and Woodward (2009) noticed that when children learn music, they adopt certain rules that determine sound arrangements in their own musical tradition. They learn the musical practices of their cultural environment while retaining an imaginative musicianship of their own. Deferred imitations of melodies are a natural outcome of children's capacity for aural memory and invention and of their intuitive sense of rhythm, phrasing and expressive narration. Repetition soon evolves into extension and transformation, by controlling a sequence or by varying certain elements in a motif, such as pulse, dynamics, melodic direction, or rhythmic content.

As we can see, in the study of musical play, the focus is generally set on sound while movement is hardly ever mentioned. A few studies about interactive musical play emphasize the multimodal aspects of musical activity in infancy; but even in the few cases movement is acknowledged it is usually considered a secondary companion to sound: the only features taken into account are those shared with sound, like rhythm, pulse and kinetic contour at most (rise-fall) (Forrester 2010; Marsh and Young 2006). Eckerdal and Merker (2009) described a type of interactive musical play that emerges during the baby's first year, whose key feature is a high degree of ritualization of movements and actions: *action songs*. In them the mother sings melodies to the baby while performing pre-established and arbitrary movements and action schemes. Movement is indeed relevant but the emphasis is put on the arbitrariness of its form and in the arbitrariness of its link with melody. They consider that action songs can be easily interpreted as the first introduction to actively participate in human rituals. A child is first induced to a ritual by being exposed to it and not necessarily by contributing, later on he participates by making simple bodily gestures such as raising his hands; with time, he finally becomes so experienced he can fully master the performance. Communal performances form a ridge in the infant's initiation into the native culture.

Forms of vitality play differs from musical play. Notice that given the adjustment to a musical underlying pulse and the use of discrete organized tones are the most distinctive features of musical play, the spring play described above –based in particular on the repetition-variation of movements and noises (not tone) – is not a musical play. Even the less restrictive versions of musical play would not recognize it as such since the core of this play is not sound but

the organization of movement in dialogical exchanges. Instead, the spring play is a paradigmatic example of forms of vitality play. The way in which both kinds of play relate to each other is still unknown to us, most likely forms of vitality play is a broader category to which musical play belongs.

Finally, another common point between musical play and forms of vitality play is that both are sometimes linked with other kinds of play: specifically with pretend play. Merker (2002) suggests that musical play overtakes other play categories by facilitating the acquisition of expectations through a regular, formal structure. Forrester (2010) reports the existence of *singing pretend play*, between 2 years, 5 months and 3 years, 10 months, in a longitudinal case study. Shifres and Español (2004) noted that pretend play is refined between the second and third years with the inclusion of some elements of musical play. For example, a girl is pretending to have a conversation through a toy phone; she then repeatedly throws a little ball while counting '1, 2, and 3' in a rhythmic pattern. She immediately goes back to the pretended phone and dials a number using the same fixed rhythmic formula. An abstract rhythmic pattern is added to a fictional action, refining and elaborating the activity in which the infant was previously engaged. The spring play previously described is also related to a pretend play action between an adult (the researcher) and a 1 year, 10 months old boy. In this case it occurs *a posteriori*: immediately after the spring play (consisting in moving it forward, stretching, and shaking it in unison) finishes, the child tries to use its end as "something else". He arduously grasps one of the extremes and leans it on a cup making a 'shhhh' sound as if pouring something with it. The spring's end is in no way comparable to a pitcher, and the gesture of serving does not appear to be performed easily with the spring. According to Español (2007), the child transits from a non-figurative action where aesthetic values predominate, to a fictional action. In this transiting, the tendency to ignore the affordances of substitute objects (proper to advanced pretend play) is anticipated.

In the field of play studies, Fagen suggests something new could arise in relation to play if the expansive concepts emerging from the study of early interactions –specifically intersubjectivity and communicative musicality– are taken into account: "Play's creative spark brings the new into being. The 'new' can consist of more complex and more elaborated play in later infancy and in early childhood" (Fagen 2011, p.96). Forms of vitality play may well be the kind of play Fagen had in mind when he suggested the possibility of a more complex, elaborated play in late infancy.

Aims

The aim of this work is to begin a systematic study of forms of vitality play (hereinafter FoVP). Specifically, we intend to detect its properties and to generate revisable open categories. To these ends, we performed a qualitative study using the constant comparative method in the observational records of interactive adult-child sessions during the child's third year, that were obtained in the longitudinal case study of play we mentioned in the introduction (Español et al. 2010).

Method

Data Collection

Developmental Period Studied We studied the period comprehended between months 24 and 36. We used the convergence approach (Bell 1953), which involves combining cross-sectional and longitudinal techniques by means of overlapping periods of age in order to accelerate the longitudinal study.

Participants Two girls –Coty and Kiara– transiting their third year participated in the study. Coty was 2 years in the first session and 2 years, 5 months in the last one; Kiara was 2 years, 4 months in the first session and 2 years, 10 months in the last one. One of the girls is an only child; the other one has two older siblings. They were both born to Argentinean parents. None of them were born prematurely nor have been diagnosed with any developmental disorders. The first author contacted their parents and explained them the study's purpose and the kind of activities involved. The girls' parents signed an informed consent prior to the start of the study. Choosing a researcher-child dyad (a particular case of the classic adult-child dyad) permits to simultaneously take two fundamental perspectives on knowledge generation in reference to interactive systems: emic and ethic –correspondingly internal and external to the analyzed system (Riba 1990). The researcher can register her own experiences and reactions on-line, generating changes around them, and thanks to the availability of registered audiovisual resources she can remotely observe them, retrieving her own previous experience. This decision clearly portrays some disadvantages. Mainly the fact that many of the activities performed by the children are probably a part of the history they share with their parents and their environment, which might sometimes be hard for the researcher to interpret. We tried to compensate this disadvantage by establishing a fluent contact with the parents once the sessions ended. They responded questions and spontaneously commented some of their child's anecdotes.

Materials A toy set containing typical objects implied in play contexts: (a) thematic objects with associated conventional uses, or their toy reproduction, like jars, plates, spoons, a pot, frying pan, comb, telephone, keys, pencils, erasers, paper, notebook; (b) dolls representing animals, people, or fantastic characters made out of diverse material, masculine and feminine rag dolls; (c) objects with no clear conventional use: clips, plastic spring, set of plastic cups, slide box, ribbons, pieces of weaved wood, stick with little balls going up and down, boxes, rags, mat rectangles.A SONY DCR-SR82 hard disk camcorder was used to record all sessions.

Procedure Forty-minute adult-child interaction sessions were recorded at the girls' homes every 15 days. The adult was the first author of this paper. She was particularly attentive to promote situations of play involving sound and movement as well as figurative play. For that reason, she took special care to ensure that child and adult had plenty of space to move around. They frequently stayed on the floor. The characteristic aspect of this procedure is an active participation of the researcher, generating a special kind of interaction –different from every-day interactions. A set of appropriate objects for play activities was displayed in front of the girls: objects of

conventional use, dolls that could easily have roles assigned to them, and objects of non-conventional use, as previously described in the Materials section. The adult started each session by offering toys and inviting the girls to play. The toys used and the activities displayed depended on each girl's spontaneity and motivation. However, the researcher encouraged play activities by initiating and inducing the girls to participate in them.

All sessions were filmed by a third person. Twenty-eight interaction sessions were recorded, summing up a total of 27,44 filmed hours.

Qualitative Analysis

We analyzed the set of the videotaped material by applying the constant comparative method that allows the detection of the phenomenon's specific properties and the generation of open revisable categories (Glaser and Strauss 1967).

In a first phase, through the iterative process of observation, we identified and selected all the events in which we recognized the girls intentionally manipulating some of the elements of the dynamic pentad (movement, time, force, space, and intention/direction) in the form repetition-variation. The procedure consisted in the realization of short descriptive narratives of the selected events. We began with the events belonging to the first session, which we made into more detailed descriptive narratives in order to be able to recognize the key elements that characterized these play-behaviors, and we attempted a first definition. We continued to systematically review in chronological order all the scenes up to the adjustment of the definition's extension with the elements that were present in each one of them. The elements identified were: the presence of units (motives) of sound and movement, the presence of the form repetition-variation, the repetition and variation of the produced sounds, the repetition and variation of the performed movements.

A second step in reviewing the videotaped material consisted in paying special attention to the particular traits of every event in the play. Some included objects, generally in the form of body extensions; others did not include objects at all. Some implied a making together similar to the one occurring between adult and baby in the spring play already described in the introduction, in others participation was asymmetric. Some events were short, others extensive. Some were extremely simple, others extremely complex. Despite this diversity, we found a distinction to be theoretically relevant, allowing us to rewrite and adjust the extension of the category of FoVP: in some events, the varied repetition of motifs constituted the entire play (with no other particular feature); in others, it came up combined with symbolic play. As a result, we distinguished between *FoVP* and *combined FoVP*.

In a third phase of the recorded material's review we paid attention to the emergent categories of the second phase, making new distinctions: (a) The revision of FoVP's events led us to distinguish between original spontaneous improvised manipulations and those in which was easy to recognize previously elaborated cultural and ritualized products (children's songs, action songs, choreography, and advertising jingles) proper to the culture of origin. Therefore we discriminated between *improvised FoVP* and *ritualized FoVP*. (b) Reviewing the events of combined FoVP made it possible to easily differentiate between two types of symbolic play widely recognized in the literature:

pretend play and *role play*. Pretend play appears at about 1 year and 6 months, with the first symbolic substitutions -using a toy rake as if it were a spoon; feeding a toy horse from a plastic egg box- (Piaget 1962; Garvey 1977; Español 2004). Role play -playing to be a teacher, mother, gardener, etc.- appears around the third year when children achieve a clear assumption of social roles (Vygotsky 1967; Elkonin 1980). In both kinds of play the focus is always set on figurative or representational content, "something" is being represented or figured. Here we distinguished between *FoVP combined with pretend play* and *FoVP combined with role play.*

Results

The application of the constant comparative method permitted us to generate the general category of FoVP and four subcategories. In the first phase, we were able to identify the properties of FoVP as a general category. Forms of vitality play is a pleasant and joyful play frame, where adult and infant elaborate units of movement and/or sound according to a repetition-variation form. The units (or motifs) are repeated at least twice, with variations in: (a) rhythmic patterns, melodic contours, dynamics, sound sonority and timbre, and/or (b) rhythmic patterns, form, dynamics, and quality of movement. The whole activity unfolds around the varied repetition of sound and movement, making it the core of this play.

In the second phase, the material's revision using the general category of FoVP generated in the first phase allowed us to identify events that showed general and specific properties of FoVP. Accordingly, we discriminated between FoVP and combined FoVP. In the first one, the whole activity unfolds around the varied repetition of sounds and movements, making it the unique focus and the essence of this play in detriment of any figurative or symbolic content. The same thing happens in the second one, but additionally it mixes with fictional actions. In these cases even though sonic and kinetic forms of vitality will constitute the attention focus, it will not be to the detriment of any figurative or symbolic content. Finally, in the third phase, we differentiated: (a) within the FoVP category, we distinguished between improvised and ritualized FoVP; and (b) within the combined FoVP category, we distinguished between FoVP combined with pretend play and FoVP combined with role play. In the way just indicated we came to delimit four subcategories of FoVP. Their specific properties are as follows.

Improvised FoVP is an improvised frame in which units of movement and/or sound (motifs) are repeated varying: (a) rhythmic patterns, melodic contours, dynamics, sonority and timbre of sound, and/or (b) rhythmic patterns, form, dynamics, and quality of movement. The whole activity unfolds around the varied repetition of sounds and movements, making it the unique focus and the essence of this play in detriment of any figurative or symbolic content.

Ritualized FoVP is a frame where rhythmic patterns, forms and dynamics of recurring movements and/or melodic contours are organized around cultural established songs or dance. The whole activity unfolds around the varied repetition of sounds and

movements, making it the unique focus and the essence of this play in detriment of any figurative content.

FoVP Combined with Pretend Play is a frame where at least one case of substitution occurs together with repeated units of movement and/or sound (motifs), varying: (a) rhythmic patterns, melodic contours, dynamics, sonority and timbre of sound, and/or (b) rhythmic patterns, form, dynamics, and quality of movement. The activity evolves around the varied repetition of sounds and movements, making it the core of this play but mixed with fictional actions.

FoVP Combined with Role Play is a frame where a simulation of a social role occurs together with repeated units of movement and/or sound (motifs) varying: (a) rhythmic patterns, melodic contours, dynamics, sonority and timbre of sound, and/or (b) rhythmic patterns, form, dynamics, and quality of movement. The activity evolves around the varied repetition of sounds and movements, making it the core of this play but mixed with fictional characters or playing a role.

Illustration of Display Modes of FoVP

Improvised FoVP is a kind of play that emerges spontaneously, achieving at the time of execution a high organization, and disappearing right after. In general, it emerges, unfolds and gets organized only once, not occurring again. It can be brief or long, may involve a similar or dissimilar level of participation in the making together, it can be organized in a very simple or extremely complex fashion. We will present three examples.

Example 1 Coty, at 2 years, 3 months, slowly and sinuously lets her back roll down a couch towards the floor, and then quickly straightens herself back up. She repeats this sequence three times, varying the form and duration of her movements and the vocalizations that accompany every repetition. The adult involved performs similar movements and melodic contours.

Example 2 When Coty is 2 years old, she is sitting on the ground approximately 1 meter away from the adult and, for 40 seconds in which they smile and look at each other's face most of the time, the following play with two springs unfolds. The child and the adult have the springs' tips in each hand and shake them generating a wave-like movement in the horizontal plane. The girl gets distracted by saying something, but continues with this movement until she freezes it. The adult also stops her movement vocalizing 'up up'. Suddenly, the girl begins to move the spring quickly, and exclaims 'aaaaaaaaaa'. The adult follows her in unison, imitating the girl's movements and vocalizations. Coty abruptly stops her movement vocalizing 'ia'; the adult does the same thing, exaggerating the mouth opening expression. In this way, the play's motif is composed by a shaking of the spring, a vocalization, and a pause. The adult repeats the motif again by shaking the spring, varying the vocalization (now says 'traaaaaaa') and stopping the movement abruptly. The girl does the same thing, in silence and with a wide smile. They repeat it again, but now the girl makes the pause a moment after the adult, who softly vocalizes 'ia'. Then she suddenly lets the spring fall and looks at the

adult, who does the same thing. Immediately after, the girl lifts herself up from the floor and points towards other toys. We have microanalyzed this play's movements finding an evident adult-infant joint construction –without verbal mediation– of the motif, which is repeated varying twice. The overall analysis of the sound-movement relationship showed some coherent attributes; for example, vibrant sound and vibrant movement (for a complete analysis see Español et al. 2011). One thing to consider is that movement repetition seems to work as a shared background (Lyra 2007) from which some sort of figures emerge bringing novelty in the form of vocalizations, abrupt pauses or movement freezing.

Example 3 Kiara at 2 years and 4 months, together with the adult, take turns to draw while vocalizing invented words for approximately two minutes. The girl draws some stripes and then asks the adult to draw a girl. The adult refuses to and says she liked something Kiara just did (in reference to the drawn stripes) and draws stripes herself while vocalizing 'ta, ta, ta, ta, ta'. The girl responds making some new stripes on the paper and vocalizing 'ta, ta, ta, ti, no, ve, de'. The researcher gets back at her by doing the same thing and says 'Ta, ta, ta, pi, no, ver, de', she laughs (since 'pino verde' is the first non-invented vocal expression in the play, meaning green pine tree) The girl makes a slightly different movement and adds a different voicing, by increasing the tone and movement's intensity but maintaining the motif rhythmic and melodic. The adult does the same thing. They smile to each other when they finish their executions. Then the child draws the stripes silently and when she is done she exclaims: '¡mirá!' (Look!). The adult draws the stripes and vocalizes 'ta, ta, ta, ta, ta, ta, ta'; but the girl corrects her saying: 'es así' (It goes like this) and goes back to drawing silently. The adult redraws the stripes vocalizing; the girl corrects her once again, until the adult draws silently on her turn. Then she changes the paper, draws a circle, and reestablishes the previous motif by making stripes while vocalizing 'ta, ta, ta, ta'. The girl, smiling, draws while exclaiming 'ta, ta, ta, ta', strongly raising the sound and movement's intensity; the pitch sound also raises up to a point where the adult can't imitate de girl (her vocal registry does not get that high) and lowers the tone. Then, they imitate each other twice until the adult abruptly changes her voice's volume turning it very soft. The girl loudly replicates with a 't, t, t' sound. They keep going for many brief motifs repetition-variation cycles where they play with the dynamics of vocalizations and movements: the adult says 'tu tu tu tu' performing short traces at the same pace; the girl does the same thing. Then the adult with a legato, soft, and ample movement, draws a circle saying 'uuuuuuu' with the same duration and characteristics. The girl doesn't follow this proposal and generates a new motif: with two fast and sturdy traces, she draws a cross while vocalizing 'mi, chá'. The adult reproduces this vocalization and movement. The girl repeats the vocalization varying it by saying 'tan, tiá', the adult repeats the same thing. The girl varies it again by saying 'santiao', the adult responds 'san, tia, go' (second non-invented verbal expression, Santiago is a male name) lastly, the girl exclaims 'san, tia, jj' and the pencil tip breaks while she is performing some rough traces. They both laugh. Play is over. Unlike the examples 1 and 2, this is a complex and extensive play formed by many motifs and varied repetitions. Its peculiarity resides in the creation of cycles of alternating shifts, the non-figurative drawing, and the inclusion of invented words in the constitution of motifs and variations. Two microanalysis were performed on it, showing that child and adult establish mutual imitation cycles of sounds and

movements with turn taking, introducing variations in the movement's dynamics, intensity and form, as well as in the intensity and articulation of the sound. The microanalytical study of vocalizations revealed that girl and adult not only shared the time pattern of their performances, but towards the play's end they got to organize them musically in a shared metric hierarchy (to view a full analysis see Bordoni and Martínez 2011). In the movement microanalysis of a fragment of this play we could observe that the alternation of shifts in the movement was organized by the adult's movement-stillness pattern and the girl's fore-aft, who only towards the play's end managed to introduce some tranquillity in her behavior (to view further details see Bordoni and Español 2011).

Ritualized FoVP are a kind of play that also arise spontaneously although they are constituted from pre-established organized forms of sound and movement. These highly ritualized types of play include action songs (described in the introduction), children's songs, advertising runs, showcased choreographies, and all kind of events in which one could recognize song and dance modes belonging to the dance and music repertoire of the child's culture. As follows we present two examples.

Example 4 Coty at 2 years, 1 month takes by the ends a pile of rectangles that are held together by a ribbon (object with no clear conventional use) and sings 'un tallarín, un tallarín' (a macaroni, a macaroni) flapping the arms. When she finishes singing this phrase she looks at the adult who asks smiling: '¿un tallarín?' (A macaroni?). The girl goes back to singing 'un tallarín, un tallarín' (a macaroni, a macaroni), while rotating her arms and torso to the sides. And continues singing 'que se mueve por acá' (moving over here), moving the toy with shorter movements in front of her visual field, accompanying the vocalization *rallentando* 'por acá' (over here), ending with a sudden lowering movement that hits the object on the table. The struck object's noise is synchronic with her last vocalization. Then she freezes her movement, stares at the adult saying 'ap' and the adult responds 'ap'. The girl starts singing a popular children song. The adult asks her '¿un tallarín?' (a macaroni?), supposing the girl is representing the macaroni with the pile of rectangles. The girl does not answer: she's not pretend-playing. She is busy playing with her own sounds and movements, trying to make the dynamics and intensity match her sounds and jointly vary on a pre-established performance plan.

Example 5 Kiara at 2 years and 5 months, sings "Tea Song" -from Argentinean children music songwriter María Elena Walsh-. The little girl, who was pretend-playing with a few dolls, adds music to the dolls' stroll by humming an invented song. This constant humming drifts on the "Tea Song" melody and the girl begins to sing the song's lyrics (although mixing parts of the lyrics) while performing several actions (moving the puppets, accommodating some ribbons on the table). Suddenly, she remains motionless in front of the adult (who is sitting on a little chair), she looks at her and sings the song adding some gestures that are in accordance with the song's text. For example, when she says 'la nariz dentro de la taza, eso no se ve, yo no sé por qué' (the nose inside the cup, you can't see that, I don't know why), she touches her own nose and shakes her head no. She repeats this part of the song three times. In the first repetition the adult sings with Kiara, but then she silently pauses while staring and listening to the girl. In the closing of the last repetition, the adult starts singing with the

girl again. The adult continues the song and the girl sings along in a slightly delayed manner since she does not remember the lyrics very well. At the same time, the girl begins to play with a few cups; the adult carries on and they both repeat five times the song's final phrase ('yo no sé por qué') (I don't know why) while tapping the glasses on the table at the time they say 'pum'. The hit and the 'pum' sound are performed in unison while maintaining the phrases' metric. The adult makes a *rallentando* that indicates the song's final closure. They remain in silence and start another play. The entire song lasts approximately one minute -since the girl begins to sing at the closure given by the adult-. In examples 4 and 5 the girls sing children's songs that are part of the cultural repertoire of the locations they live in. And in response to the song's structure they perform it in a personal way by adding the described movements. Play of the kind, show how the partners' progressive constitution of shared dialogical forms become objectively constructed, turning into public achievements by integrating ritualized forms of exchange and cultural elements of the environment.

In FoVP combined with pretend play the sound and movement organization favours the development of fiction.

Example 6 at 2 years and 1 month, Coty grabs and moves the spring like a steering wheel saying 'el paseo de papá' (daddy's ride). When the hand hits the spring twice she says 'toco bocina pip pip' (I play the horn pip pip); repeating 'pip pip' and hits it again. The girl repeatedly alternates her gaze between the adult and the spring. She begins to rotate it with sinuous arms and trunk movements singing 'el paseo de papá', then she tiptoes quickly and repeats 'el paseo de papá, el paseo de papá'. She keeps running to the door and stands in front of it. The adult replies by singing 'el paseo de papá'. At that point the girl leans the spring on the door frame and moves it upwards by stretching herself to finally moving it downwards. The spring symbolically replaces the wheel and the sinuous movements of arms and trunk seem to evoke the path of a car driving on the street. The repetition-variation of sounds and movements made by the child beautifies and enriches her pretend playing.

Example 7 at the same age, Coty grabs a wooden doll and says 'a bailar nos vamos' (dancing we go), she shakes it up and down, hitting the table with it more than ten times, accompanying these movements with the vocalization 'la la la'. Towards the end she accelerates the beating pace and changes her vocalization to 'uh ha ha' and further accelerates the hitting, until she stops. The doll falls, Coty says 'upa'. Then she lays it face down on the table and says 'a dormir' (go to sleep), and taps its back twice with her hand synchronously saying 'sh sh'. She repeats the motif giving three strokes adding 'sh sh sh', she looks at the adult who is also doing 'sh sh sh' and turns to repeat it in the same way. She rolls the doll back up, lifts it upwards and says 'a bailar, vamos' (dancing we go) once again. The girl attributed animated beings' traits (sleeping, dancing) to a wooden doll and got the doll to do animated actions by repeating and varying sound units ('la la la', 'sh sh sh', etc.) and movements performed on the doll (bob up and down, pats on the back, etc.).

Few cases of FoVP combined with role play were observed; all of them towards the end of the third year.

Example 8 Kiara at 2 years, 9 months is playing with some wooden dolls (two witches and two robots), and says that the two witches are the researcher and the camerawoman, while she and her sister are the robots. And then she approaches her sister Milena (who was watching in a non participatory way) and starts singing with a nasal, strained voice 'somos las robóticas' (we are the robotics) repeating it eight times, in a variety of ways, dancing, moving the dolls and looking at them, making them dance. The phrase's melody is invented by the child. Then, while still singing, she takes two witch dolls and adds 'ustedes son las brujas' (you are the witches) and strongly hits them twice against a table. And keeps on singing 'las brujas no existen más, las brujas no bailan más, las brujas no bailan más' (no more witches, witches do not dance anymore, witches do not dance anymore). The researcher and the camerawoman constantly stare and smile at the girl. Then she grabs the doll representing her sister and says 'la voy a peinar a Milena' (I will comb Milena's hair), she runs her hand through her hair and then leaves the room. The sequence lasts about a minute and a half, varied repetitions of various sound motifs or units occur ('somos las robóticas', 'las brujas no existen más') and also kinetic (movements that accompany these verses). All sung phrases are on-line created by the girl, and her expressive features (sound and movement) characterize the characters (witches and robots). The researcher, the camerawoman, and the sister are there smiling and accompanying her, while she displays and gives life to the whole scene with her very own resources.

General Discussion

We have described an unnoticed kind of far-reaching non-figurative play frame in infancy: forms of vitality play. As Stern pointed out, the baby perceives vitality forms from his origins and participates in early dyadic social play with these forms. Our research shows that children go beyond this early social play and develop the ability to actively execute and manipulate, namely, to play with forms of vitality in their dialogical exchanges. Infants go from perceiving to purposefully manipulating forms of vitality.

Forms of vitality play is a joyful, rather soft or abrupt, vital and sensitive kind of play where an intimate and vivid experience of communicative musicality takes place between those who play it. It is also a frame in which forms of vitality are handled in a pleasant remunerative activity, where units (or motifs) of movement and/or sound are repeated varying their dynamic, rhythmic, and melodic components. The application of the constant comparative method allowed us to recognize these general properties of FoVP as well as different display modes of it. In a first instance, we were able to distinguish between FoVP and combined FoVP. In FoVP the whole activity unfolds around the varied repetition of sounds and movements, making it the play's unique focus and essence in detriment of any figurative content. In combined FoVP the activity unfolds around the varied repetition of movements and sounds, in this way, and together with the figurative content, they become the play's center. The detection of pure FoVP events shows the independence of this type of play. The combined forms show their promptness to integrate with other kinds of play, especially with children's symbolic play.

The application of the constant comparative method also allowed us to identify two types of FoVP: improvised FoVP and ritualized FoVP. Improvised FoVP evidences the child's ability to manipulate and play with sounds and movements with no intention to represent any kind of figurative content in the dialogical exchange with the adult. As in nonrepresentational contemporary dance and non programmatic music, the play does not refer to anything other than itself; the play's "meaning" lies in the actual manipulation of sounds and movements. Improvised FoVP are extremely relevant because they exhibit the spontaneous, graceful and easy adult-child ability to co-create play activities. Joint improvisation is the hallmark of this play in which improvisations occur on-line without resorting to any figurative content. They are an original, recreational activity emerging spontaneously. They tend to achieve a high organization at the time of execution, and then disappear. They usually do not recur. Maybe the same improvised and fleeting character is what, despite their richness and complexity, prevented their observation and description (at least to our knowledge). Ritualized FoVP, however, while also arising spontaneously, is constituted from organized sound and motion pre-established ways. In it one can recognize bits of songs and dance belonging to the music and dance of the child's culture evidencing the artistic enculturation of the child that -although it's been less considered in academic psychology- runs alongside linguistic enculturation.

Although the value of FoVP for psychological development is still unknown, we can now begin to think about it. If repetition establishes a mutual understanding between both participants that grows into a ground they both end up knowing well, the repetition-variation form will be considered since variations will introduce novelty. Initially this process will be guided by the adult as it happens in early social play, but later it will be taken upon by the child (forms of vitality play proper). To sum up, innovation will take place as long as repetition permits the establishment of dialogical forms as mutual knowledge or understanding. According to Stern, without vitality forms, the exquisite fine-tuning of interpersonal interactions would not occur. It is easy to assume that forms of vitality play is linked to the development of intersubjectivity: it allows to repeatedly experiment with the variations in vitality forms of the other's behavior, and at the same time to be the agent of such variations. Having expertise in the perception and generation of variations in forms of vitality is one of the nonverbal cues of interpersonal encounters. Forms of vitality play and improvised FoVP in particular, might be preparing the child for the complex and varied experiences of intersubjectivity, intimacy, or mutuality in adult life, and participation in the temporal arts. When ritualized and cultural established songs and movements are introduced, there is an evident tendency in the exchanges to continuingly construct shared meaning and public cultural activities of meaning making. In this sense, we can think of Ritualized FoVP as a road towards establishing cultural shared activities. In combined FoVP the varied repetition of movements and sounds merges with figurative and symbolic content. In FoVP combined with pretend play it enriches symbolic substitution, and in FoVP combined with role play it helps to distinguish the characters or social roles. In both cases FoVP beautifies and enriches the development of fiction. FoVP appears as the non-fictional ground for a fictional "take-off".

To this point we have only given the initial steps of the constant comparative method. Our empirical research sheds light on preliminary display modes of FoVP. It is possible that the four basic display modes of FoVP described (improvised FOVP,

ritualized FoVP, FoVP combined with pretend play, and FoVP combined with role play) are not the only manifestations of FoVP. Left open is the possibility for future studies to recognize other kinds. Much work remains to be done towards generating and strengthening a grounded theory on forms of vitality play. Of the utmost relevance is to explore developmental changes of FoVP in infancy. Future longitudinal design studies would permit the observation of this change and the generation of new hypotheses. An extensive microanalysis of sounds and movements could reveal further details on FOVP's internal organization. On the other hand, given that the interaction sessions with each girl took place every 15 days for a total of 6 months, every researcher-child dyad was able to develop its own history of dialogical exchanges. In fact, re-emerging frames can be observed in the videos transforming and becoming richer session after session. Prospectively, a microgenetic and historical analysis of selected frames could be performed (as Fogel and DeKoeyer-Laros 2007) that would allow us to describe changes in greater detail and to identify innovation in the dialogue flow.

One of the main limitations to our work is the studied dyad: researcher-child. The "well informed researcher" was an integrated play partner that certainly generated and molded a special kind of interaction that differ from those occurring every-day: she was particularly attentive to promote situations of play involving sound and movement as well as figurative play, she encouraged child's play activities, by actively initiating and inducing the girls to participate in them during rather long (40 minute) adult-child interaction sessions. Child and researcher frequently stayed on the floor to ensure they had plenty of space to move around. Due to her knowledge in dance and other corporeal practices, the researcher was particularly attentive to emerging movement patterns. Our work exhibits play with vitality forms performed by these two particular dyads where play frames cascaded one after the other, in part thanks to the researcher's personal, emotional and theoretical involvement and to her ludic predisposition. Undoubtedly, future work should analyze this play in other dyads (parent–child, caregiver-child, child-child) and in other contexts.

Finally, we would like to add one suggestion. Stern has linked early social play (where babies perceive vitality forms) to temporal arts (where artists manipulate vitality forms). The ability to manipulate or elaborate vitality forms has to be acquired with development, and play is certainly a privileged context for a safe rehearsal. We think FoVP provides a genetic link between early social play and adult expressions through the temporal arts. Forms of vitality begin to be exercised in the first months of life and run along with us up to the time it ends, at first through play, later on through the temporal arts.

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