Exploring musical dynamics in therapeutic interplay with children:

A multi-layered method of microanalysis

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Abstract

This article describes the development of a research procedure including a musical framework, to explore, describe and illuminate intersubjective exchanges in child psychotherapy. Applying a qualitative explorative approach, musical parameters were studied and analysed within an intersubjective framework, in selected samples of emotion regulation with children in time-limited intersubjective psychotherapy (TIB). The resulting multi-layered microanalytic method is illustrated through one example and discussed in light of the research questions. Through exploring musical parameters from second to second as focal points within a multi-layered analysis, such parameters seemed to embody the child's feelings and intentions as well as organize intersubjective exchanges. The concept of *musical dynamics* is suggested as a description of lived relationship experiences over time.

Keywords: Therapeutic relationship factors, musical parameters, Time-limited intersubjective child psychotherapy, microanalysis, dynamic forms of vitality, emotion regulation.

Introduction

The aim of the article is to explore how musical parameters can illuminate therapeutic relationship factors in child psychotherapy. The background is psychotherapy research, which validates the significance of relationship factors for change processes, independent of any therapy method (Orlinsky, Rønnestad & Willutski, 2004). From infant research, knowledge about the role of intersubjective microprocesses for human development has shown how musical parameters help to clarify key aspects of such microprocesses. In this article I describe the development of a multi-layered method for a second-to-second microanalysis of intersubjective exchanges. The data comes from a study of therapeutic interplay with children with poor emotion regulation capacity. A multi-layered approach to microanalysis, which included musical parameters, was explored in order to expand the understanding of

intersubjective processes in child psychotherapy. The concept of *musical dynamics*¹ is suggested as a description of the dynamics of lived relationship experiences over time. Change in child psychotherapy is seen to surface from new intersubjective experiences which take place in micro-events in the here and now (Stern, 2004; Lyons-Ruth, 2000). Such here and now experiences organize basic developmental processes. A growing body of knowledge also indicates that therapeutic change involves basic developmental processes, such as attention and emotion regulation (Saarni, Mumme & Campos, 1998; Schore, 2003; Campos, Frankel & Camaras, 2004; Jacobsen & Svendsen, 2010; Braarud & Nordanger, 2014). Emotion regulation encompasses the ability to experience, regulate and express emotions (Saarni, Mumme & Campos, 1998). It is a basic capacity involved in core self-developmental processes such as mentalization and self-agency. Both developmental psychology and psychotherapy research show that failure in emotion regulation is an independent factor in several psychological health problems in children (Fruzzetti et al., 2005; Cicchetti, 2008).

Taking a developmental research perspective (Lyons-Ruth, 2006) on child psychotherapy, the focus is on studying therapeutic interplay between therapist and child second by second in small emotion regulation samples. A multilayered research procedure to explore musical parameters' impact in organizing such interplay is inspired by two main sources: Firstly, by my own training and practice in clinical improvisation as a music therapist which lead to a further interest and study of the psychological significance of therapeutic interaction for development. Knowledge from infant research places intersubjectivity at the core of development (Trevarthen, 1980; Stern, 2000) and has also become applied knowledge in music therapy (Pavlicevic, 1990; Johns, 1993, 2008, 2012, Trondalen, 2004, 2016). Secondly, by an understanding of intersubjectivity being a facilitating condition for therapeutic development in child psychotherapy (Hansen, 1991a, 1991b, 2012). There are now many treatment methods documenting positive effects for children (Kazdin, 2002, 2004; Midgley & Kennedy, 2011). Shirk and Russel (1996) have for long emphasized the importance of being able to gain "a more precise understanding of the change process embedded in therapeutic relationships" (p. 184). I see this in line with an increasing focus on bridging different fields of knowledge to expand our understanding of the therapeutic relationship as 'the something more than the therapy method' (Horvath & Bedi, 2002; Orlinsky, Rønnestad & Willutski, 2004). It encourages being able to create multiple meanings from complex processes (Tronick & Perry, 2015).

¹ Arguments for this choice of concept will be given in the Discussion section

A method applying musical parameters within a multiple frame of understanding was explored and developed. Musical parameters² were chosen from the research perspective of elucidating developmental changes from second to second. It is rooted in knowledge about the musical foundation of human relationships from the start (Papousek & Papousek, 1981; Stern et al., 1982; Trevarthen, 1999, 2008). Also, clinical experience from child psychotherapy shows how children's inner world comes to the fore through dynamic, vocal, rhythmical and temporal changes. Musical parameters are applied here as concrete descriptions of the specificity of therapeutic intersubjective exchanges with children as these unfold. I will firstly outline the theoretical perspectives which comprise my foreknowledge. Next, I will outline the research questions, before describing the procedure in developing the microanalytic method with an example of how it is applied in a two-minute emotion regulation sample. Finally, I present the description of this emotion regulation process from a multi-layered perspective. The data is part of a larger study, conducted at the Norwegian University of Science and Technology (NTNU), of changes in emotion regulation in children 9-13 years with internalizing difficulties who receive time-limited intersubjective psychotherapy. The project has been approved by the Norwegian Data Inspectorate and the Regional Committee for Medical Research Ethics.

Intersubjective child psychotherapy as a developmental frame

Time-limited child psychotherapy has, during the later years, been developed as a mentalization based method (Lindqvist, 2013; Odhammar et.al, 2011, 2015; Midgley et al., 2017) and an intersubjective method (TIB) (Johns & Svendsen, 2016; Hansen, 2012; Trondalen, 2009-2010). Results from earlier studies (Odhammar, 2015; Haugvik & Johns, 2008; Haugvik, 2013) show an impact on children's self-development, with increased expressiveness and self-agency, as this is shown in symptom scales and parent interviews. The approach in this study builds on an understanding of child psychotherapy as a frame for intersubjective processes (Hansen, 2012). Therapeutic development is embodied in therapeutic interplay suited to the needs of the individual child. Time-limited psychotherapy (TIB) has three distinct criteria: Establishing a clear timeframe, parallel sessions with parents and a mutually agreed therapy focus. The content of the therapy sessions with the child is open and improvised between therapist and child, and

² "Musical parameters" is used as a general term encompassing and including (often Italian) concepts to describe tempo and tempo variations (speed range), volume and volume changes (dynamic range), sound and articulation (mood(s) and character(s) of single notes, sections or the complete piece to be performed).

may include a wide range of activities and approaches. It is a mutually constructed process, from what emerges in the dialogue and the developmental needs of each child. Taking the child's perspective in the here and now is in the forefront. Daniel Stern proposes that therapy for long has been time-blind, giving too much attention to the content of therapy at the expense of the process, both as it unfolds in micro events and in constructing self-biography (2004). The therapist has an active role through the sessions in exploring the child's feelings, intentions and thoughts, as they are expressed implicitly and explicitly, and from there creating new meaning. It implies recognition of, and a tolerance for different subjective worlds. Intersubjective relating means creating mental contact, where nonverbal and affective bodily experiences have priority (Lyons-Ruth, 1998, 1999; Trevarthen, 2001, 2002; Stern, 2005, 2010). The child's relational history emerges here and now with opportunities for reconstruction through new relational experiences. The focal point is on the therapist's and child's mutual synchronizing and structuring of the dialogue on a micro level.

Tronick points to the improvisational nature of emotional regulatory processes from second-to-second, with a mutually created interchange of coordinated and uncoordinated exchanges, which he describes as interactive errors and repairs (1989, 2004). These are exchanges which provide *affective scaffolding* for the child's ability to reorganize *implicit relational knowing* and express feelings in greater complexity. It is a process towards a *dyadic expansion of states of consciousness* in the therapeutic relationship, and in self- organization (Tronick, 1998). According to general principles of dynamic systems theory, human consciousness is understood as a system continually interacting with other systems. The simultaneous dyadic activation of states of consciousness in the interplay, allows for something new to emerge which would otherwise have remained outside intersubjective sharing. It presupposes a systemic understanding of the therapeutic relationship wherein mutuality is continuously constructed, reconstructed and expanded. The therapist directly responding to and scaffolding the child's signals helps to advance self-agency in the child and reduce interactive stress. The reorganizing of self-regulation is therefore at the core of psychotherapeutic change (Beebe and Lachmann, 2002).

Musical parameters as basic dialogical features

Infant researchers (Papousek and Papousek, 1981; Trevarthen, 2008; Stern, 2000, 2002) have pioneered awareness of the interrelatedness of music and social communication from the start. The view is that musicality is inherently communicative, enabling intuitive access to each

other's affective states. Musical parameters such as changes in melodic and vocal intonation, rhythm, tempo, timing, pauses and intensity appear as the first way humans communicate and share subjective states. When such communication is responded to the child's communicative capacity increases. Children appear to have an inborn tendency to automatically express their emotional state and are especially sensitive to contingent communication in that they expect a response which is implicitly meaningful (Fonagy, Gergely, Jurist & Target, 2002). Stephen Malloch refers to *communicative musicality* to describe how the interaction between parent and infant is continually co-created with tonal and rhythmical elements which convey an emotional and motivational narrative about what goes on in the relationship. The elements of pulse, quality and narrative are seen as ways of transporting emotional experiences from one person to the other; "Narration allows two persons to share a sense of passing time, and to create and share a particular experience which evolves through this shared time" (Malloch, 1999, p.45). Research on the significance of affective microprocess has led to a focus on finding ways to describe these within adult psychotherapy (Beebe & Lachmann, 2002; Stern, 2004, 2008) and child psychotherapy (Hansen, 1996, 2000; Johns, 2008, 2012; Harrison, 2003). A clinical study of time-limited intersubjective child psychotherapy with children experiencing difficult family situations (Johns, 2008) showed how children spontaneously expressed subjective experiences in the therapeutic dialogue that had distinct musical qualities, independent of the content of the dialogue or the child's diagnosis (ibid.).

Stern (2000) describes human development as a continuously co-constructed and organizing process, with movement, rhythmical and melodic/tonal mutuality at its heart. Sander's view on humans as self-organizing individuals where the function of rhythmicity is to promote mutual recognition within a complex relational system is on par with this (Sander, 2002; Benjamin, 2002). Thus, in the present context, musical parameters are seen as concrete and basic features of the construction of human dialogue, implicitly enabling or inhibiting humans to co-create and share time meaningfully (Fernald, 1985, 1992; Beebe et al., 2005; Bonde, 2011).

Forms of Vitality

Forms of vitality refers to the special way that we encounter dynamic experience in space and time, which influence how we perceive, evaluate, regulate and share mental states. It was proposed by Stern (2010) as a description of how dynamic subjective experience embodies the integration of five basic elements; movement (which is primary and includes mental

movement), time, space, intensity/force and intention. In his view, dynamic forms of vitality are the gateway to access the mental activity of others. Musical parameters, such as *accelerando*, *crescendo*, *fading* etc. define how constantly changing forms of vitality feel like in our bodies. All through his writing, Stern has suggested that human behavior, thoughts, feelings and actions have a musical quality and a time contour (Stern, 1977, 2002), and he has used the term temporal dynamics to include musical dynamic forms (2002). In Stern's view the experience of temporal dynamics is inextricably linked to microprocesses: "As an experience unfolds, there are microshifts in the quality and intensity of the act, and the feeling evoked in you. The shortest meaningful chunking has a contour in time" (Stern, 2002, p.13). He claims that, for the most part, psychology has ignored temporal dynamics. This implies that looking at the musical parameters in the reciprocal regulation process at a micro-analytic level may elucidate regulatory patterns involved in misregulations and interactive repairs (Stern, 2010; Tronick, 1989). When a child has a new intersubjective experience in the therapeutic relationship of an interactive repair, this affects a development towards better coping and self-agency. Importantly, self-agency as Stern sees it implies the child's experience of the therapist being moved to see events from the child's point of view and adjusting accordingly. Vitality can be understood as a result of successful emotion regulation to help children actively direct attention, express their feelings more forcefully and immerse themselves in play (Jacobsen & Svendsen, 2010). Intersubjective sharing through affect attunement as described by Stern (1985), which includes both a temporal and a dynamic quality of matching, was firstly described by Stern as vitality-attunement, relating to his concept of vitality affects as manifestations of how emotions are mobilized, experienced and shared from birth (Stern, 1985, 2000, 2010). He emphasizes the temporal aspect together with the dynamic aspects. In her work with clinical improvisation with adult patients in music therapy, Mercedes Pavlicevic (1990, 1997) has explored the basic dynamic, amodal features of the concept vitality affects and transferred into a theory of clinical improvisation. Her formulation of *dynamic form* brings attention to how the patients' musical improvisation may disclose personal themes. She elaborates on how different dynamic forms may provide the therapist with a musical profile and understanding of the patient's musical needs, and thus give meaning to and direction for various interventions in the music towards improving the interplay in therapy. The time aspect does not seem to play any particular role in Pavlicevic's theory. However, on a microlevel, vitality affects are tied to the temporal form of human experience, as an activation feeling-form pattern (Stern, 2000, 2004; Damasio, 1999). According to Daniel Stern vitality affects define the intensity, rhythm, change and duration of

the experience: “I have come to realize that the metaphors for temporal dynamics are more than metaphors and that our subjective experience has more in common with music” (Stern, 2002, s. 13). Such dynamic vitality forms are at the heart of the development of emotion regulation. The therapist’s apprehension of the temporal dynamics of the child’s vitality affects becomes the basis for emotion regulation; to regulate arousal in the nervous system and prevent a break-down in intersubjectivity. Importantly, it includes the therapist’s capacity to become aware of and regulate her emotions. The child’s apprehension of the therapist is primary implicit, based not so much on what the therapist does or says, but on how she relates to the child through body and voice intonation. It is what is referred to as the affective dialogue (Tronick, 1989) or the music and dance of therapeutic action (Harrison, 2013).

To be receptive to the emotional life of children through forms of vitality, as dynamic movements in space and time from moment to moment, is a process which is first and foremost implicit and affective. The Norwegian psychologist Bjørg Røed Hansen who has collaborated with Daniel Stern for many years, and has pioneered an intersubjective understanding of psychotherapy, has introduced the concept of potential time, with reference to Winnicott’s concept potential space (Hansen, 2009). Potential time is subjective experiences from second to second with different “time-shapes” (Stern, 2002) with the potential of structuring new intersubjective experiences into a narrative time. Time enters development and bears significance on being and identity through ‘floating in the moment between that which was and that which shall become’ (p. 200).

Research aim and questions

The main objective is to explore how a method of microanalysis, which includes musical parameters and concepts from infant research as layers of analysis, can be developed for studying and elaborating changes in samples of therapeutic interplay involved in emotion regulation. Further, to discuss if and how such a procedure may illuminate features of intersubjective exchanges in emotion regulation episodes. Knowledge from infant research and neurobiology, which points to the significance of nonverbal, mutual affective exchanges for developmental processes, is at the bottom. Furthermore, it builds on knowledge from infant research of musical parameters, such as vocalizations, timbre, pitch, melodic contour, intensity, rhythm and tempo, as concrete descriptions of intersubjective exchanges. The first research question is if and how concepts from music can be useful to capture intersubjective exchanges between therapist and child that take place in these samples. The second research

question is if and how a description of musical elements, applied together with developmental psychological knowledge, may illuminate basic developmental processes such as emotion regulation in child psychotherapy. The aim is not to say something about causality or the direct effects of therapy, but to point out and discuss some special features in the child therapy process.

Method

Design and procedure

Main research method was video analysis of lived experience. Since this was a naturalistic study, videotaping followed the usual procedures in the clinic, using a fixed camera with a clear overview of the therapy room. All the therapy sessions were video recorded, including the three initial sessions before start of therapy.

Microanalysis

The research procedure was guided by a qualitative explorative and flexible approach to the data material in the study. A method of microanalysis was applied in which details could be studied from second to second, to ensure rich information about emotion regulation samples. Microanalysis aims at a detailed description of micro events over a short period of time lasting from seconds to a period of a few minutes (Strauss & Corbin, 1998; Trondalen, 2007, 2016; Wosch & Wigram, 2007). This method forces the researcher to concentrate on details in small units of data, descriptively and analytically (Strauss & Corbin, 1998).

Participants

The participants were six children between 7-11 years of age. A prerequisite for participation was that the referral described internalizing symptoms in the children, that the parents gave a written consent to such treatment and participation in the research project and finally that the children wanted to enter child psychotherapy. The selection consisted of three girls and three boys to avoid potential gender differences.

Therapists

Three of the therapists were experienced clinical child psychotherapists, the author, who is also an experienced music therapist, being one of these. One of the therapists was an advanced psychology student in internal clinical practice under close supervision from

experienced child psychotherapists. The therapists met regularly to discuss and share data material.

Purposeful sampling

Purposeful sampling means that particular units can be selected according to a key dimension, for the purpose of getting rich information on the phenomenon that is being studied (Patton, 2002). According to procedures for purposeful sampling (Patton, 2002; Charmaz, 2006) data was firstly narrowed down to selected samples where explicit manifestations of emotion regulation appeared. For each of the six children sequences were selected according to the same procedures. The overall main theme for research being the development of emotion regulation: 1) Therapists were asked before the start of therapy to be attentive to and make a note for each session whether emotion regulation emerged during the session, and how. 2) The notes were made after each therapy session. The journal notes from each session was read carefully to look for observations and references to samples where the child expressed feelings in a positive or/and negative way that was considered new or significant. 3) After therapy ended, the researcher asked the therapists about specific episodes containing what they would describe as significant to emotion regulation. 4) The researcher finally looked through the potential sessions with emotion regulation samples for each of the six children. In the end two samples of approximately 2 minutes each were selected for each child, which were illustrative of therapeutic interplay involving emotion regulation, based on the procedures described above.

Analysis of the clinical material

In the processing of data, elements from qualitative methods such as *grounded theory methodology* (Strauss & Corbin, 1998; Charmaz, 2006), *phenomenological approach* (Giorgi, 2009) and *consensual qualitative method* (Hill, Thompson & Nutt-Williams, 1997) were applied. Grounded theory methodology combines phenomenology with heuristics (Skovholt & Rønnestad, 1992). Phenomenology implies a description of phenomena as they are subjectively experienced (Giorgi & Giorgi, 2003, Giorgi, 2009). A phenomenological approach to data involves being mindfully sensitive to the type of data being researched to maintain the complexity in attitude (ibid.). A subjective phenomenological experience of data includes the use of ones senses; feelings, bodily experiences, hearing etc. Heuristics (Rennie, 2012) refers to a process whereby data and theory, the interpreter and interpreted are viewed in light of each other. It is a method of constant comparisons, both within and between

different cases to guide a refining and specifying of constructs (Charmaz, 2006). Grounded theory methodology involves a continual re-examination and modification of data (Strauss & Corbin, 1998; Skovholt & Rønnestad, 1992) and has provided guidelines for the following processing of data. An analysis of videotapes and process notes comprised the basis for the presentation of key aspects of the analysis process, as well as notes of discussions, planning and processing of the study. Discussions have taken place between the author and research team and between the author and external supervisors. My foreknowledge about time-limited intersubjective therapy with children (TIB) and of music was another contribution to the process. Results and articles from a previous study on TIB (Haugvik & Johns, 2008) formed a knowledge base for the present study and analysis. The following steps were carried out in the analysis process:

- 1) The first step was to select a video sample from the previous study, based on the procedure for purposeful sampling.
- 2) This sample was watched several times, striving to maintain an open focus to the data material, in order to capture the complexity of characteristic features and patterns in the therapy process before noting down observations in as great detail as possible.
- 3) A detailed transcription was made of all the non-verbal as well as verbal exchanges in the therapeutic interplay, freely applying psychological concepts and musical concepts. During the process of watching repeatedly, new descriptions emerged.
- 4) Selected video samples from each of the six participants in the present study were watched, following the same steps.
- 5) The tempo was manipulated when watching the video samples, to see if increasing the speed made mutual coordination patterns between therapist and child stand out more clearly. This is a technique used in infant research to study continuity and discontinuity in the dialogue (Malloch & Trevarthen, 2010).
- 6) Elements from consensual research methodology (Hill et al., 2005) were applied: Psychological and musical parameters' concepts emerging in the descriptions of samples so far were discussed with a clinical psychologist, who has also done infant research and a musicologist who is also a music therapist, in order to reach consensus. If there was disagreement between the viewers the video sample was watched again and discussed, until consensus was reached. A tentative list was made with concepts from music and intersubjective exchanges and sharing, without making any assumptions as to their possible interrelatedness (table 1).

Table 1

Emerging concepts for therapeutic interplay

Musical	Intersubjective exchanges
<ul style="list-style-type: none"> • Voice intonation (dolce/marcato) • Voice articulation (legato/staccato) • Movements (energico/liberamente) • Rhythmicity (regular/irregular) • Fluency (more/less) • Intensity (crescendo<>decrescendo) • Dynamics (piano<forte) • Timing (rubato/fixed) • Tempo: a) fixed (largo<presto) b) variable (accelerando<>ritardando) 	<ul style="list-style-type: none"> • Dyadic synchronization • Clarifying intention • Expressing desire • Promoting self-agency • Mutual attention • Affect attunement • Shared feeling voyage • Dyadic modulation • Interactive errors • Interactive repairs

7) Finally, a method for microanalysis was explored, on the basis of the descriptions made so far; organizing the data into units across a time-line made it easier to look at the relationship between the different descriptive levels over time, and to make comparisons. This was carried out as a free-floating creative process, as the units emerged (Strauss & Corbin, 1998). Inspired by grounded theory this free-floating approach to the data was named impressionistic. Three levels of descriptions were written down for each unit: 1. Description of the therapeutic interplay, 2. Description of musical parameters which emerged in the therapeutic interplay and 3. Psychological description was made on the basis of a constant comparison between the three levels, applying concepts from a developmental intersubjective perspective. Sequences of change in emotion regulation were identified during the sample. Lastly dyadic themes were identified on the basis of interactive exchanges within and across units. During the constant comparison process the concept of *musical dynamics* emerged as a synthesis of musical parameters and forms of vitality. A strict second-to-second description, together with a free-floating impressionistic view, was seen as providing rich and detailed information. According to grounded theory methodology it was therefore decided to use this procedure as a constructive and creative method for microanalysis (table 2).

Table 2

Final procedure for microanalysis of selected video samples

- 1) Description of the therapeutic interplay**
 - a. Detailed description of second-to-second therapeutic exchanges
 - b. Impressionistic approach
- 2) Description of musical dynamics**
 - a. Detailed description of forms of vitality emerging through the musical parameters in therapeutic exchanges from second-to-second
 - b. Impressionistic approach
- 3) Psychological analysis**
 - a. Going back and forth between 1) and 2) and 3)
 - b. Make descriptions of dyadic themes which emerge, on the basis of the constant comparison process and changes in forms of vitality across the whole sample
 - c. Identify sequences and periods of change in emotion regulation across the whole sample

Example

The following example demonstrates how the microanalytic method was applied. In the notes made by the therapist, this sample showed an episode of emotion regulation where the boy for the first time took initiative to express difficult feelings. It was also described that the sample contained an interactive error (Tronick, 1989), and that changes in the boy's tempo were noted as significant for being able to make an interactive repair. The analysis of the sample was done according to the method for microanalysis. During the analysis, two periods were identified. The length of the whole sample was two minutes. Making comparisons back and forth between the three units of description facilitated new understanding in each. During this constant comparison process, together with changes over the whole sample, dyadic themes related to emotion regulation emerged. It was decided to write these themes down as tentative meaning-units for further analysis (table 3). Table 3 (Appendix) shows the raw material of this sample in the prototype for the method of microanalysis.

Description of the emotion regulation process from a multi-layered perspective

The following is the description of the emotion regulation process which emerged from the multi-layered analytic process of the two-minute sample. It represents a condensation of the raw material, which has been integrated into a narrative based on the multi-layered microanalysis:

The child is seen entering the therapy room backwards, while studying and blowing on his fingers before hiding them on his back. When the therapist enters, there is a shared attention with the boy and he stretches his fingers towards her. In this beginning of the sample, called the *prelude* of setting a relational theme, the elements of *musical dynamics* in the boy's movements, with a steady rhythm and a high correspondence between tempo and dynamics, creates an impression of intentionality. The slow tempo conveys seriousness and importance, as someone who has something important to tell. When the therapist asks about the fingers the question has a staccato voice articulation which leads to a break-down to irregularity in the boy's bodily rhythmic movements, and fast shifts in intensity and bodily orientation (looks back and forth etc.). The experience is of a boy expressing ambivalence and helplessness. The high intensity level of his vocal intonation when he says "I'm bleeding" is associated with anxiety. At the same time the vocal intensity fits with the previous impression of a need to express something important and serious to the therapist. The therapist continues to investigate this "something" by matching the boy's rhythm and intensity in voice intonation. However, there is a lack of synchrony in the interplay; the therapist keeps a slightly faster tempo than the boy, which makes the therapist unable to find mutual points of entry for further intersubjective sharing; the therapist's voice and movements gradually becomes more "staccato" with a lack of a stable rhythmic pace. Staccato is a concrete musical description of a marked distinction of lack of fluency and coherence. An *interactive error* takes place and is experienced as a rhythmical error. The therapist continues to focus attention on the boy's finger and expresses "hmm", now with vocal intonation which matches the previous intensity in the boy's expressions. This leads to what is experienced during the analysis process as an *episode of dyadic synchronizing opportunity* and mutual attention. The therapist accelerates in tempo and goes on without a pause to ask the boy whether he needs a band aid. This leads to a *breakdown in synchronization* and the boy declines. There is a shift in the therapist's behaviour following his decline: Tempo and intensity decreases, she stands up and starts moving, and when she speaks the vocal vitality contour expands to a wider range of tonal expressions. The boy starts moving a little before the therapist invites him to wash off his blood, an invitation he immediately responds to and in doing so he coordinates movements and pace with the therapist's to the sink. The impression is that he seizes the opportunity for mutual regulation. His pace becomes steady, and at the sink he starts humming freely, which here is seen as an expression for better emotion regulation. The boy's forms of vitality, expressed through his humming, seem to encourage the therapist to make a comment with a voice intonation which has a lightless, saying "Oh well, such things happen". It emerges as an

opening invitation to share mutual attention about the fact that “things happen”. It may also be seen as a sharing of the boy’s feeling state, through selective attunement to his subjective experience of “such things”. The sharing confirms all of the experience, without specifically addressing the pain or shame of the experience which the therapist also has felt was there from his forms of vitality in the beginning. The sharing is seen as *an interactive repair*. The boy now moves back with increased vitality in the same direction as the therapist, he then stops with an expression of seriousness, helplessness and pain which is clearer than before. Again, the boy stretches his fingers towards the therapist and the feeling of him wanting to share intention from the beginning emerges, this time as a clarifying of intention. The boy is very focused on the therapist’s face, while making small movements with his fingers on his side. The therapist wonders whether it hurts, and her vocal rhythm matches the rhythm of his fingers moving. She adds the word “maybe” at the end of the question, to share the possibility of different subjective experiences. The boy confirms that it hurts, looking frightened. His mouth moves downwards as to cry. Microanalysis from a musical framework perspective here shows *a modulation*: The tempo of his movements slows down (*ritardando*) to *largo* (very slow, serious tempo). At the same time the atmosphere (“*music*”) in the room changes to *minor* (sad). A dialogue now evolves between therapist and child with mutual sharing of the boy’s subjective experience. It emerges as a complementary process where the therapist becomes confident to explore further the boy’s experiences and actions and is able to hold the process also when the boy gets aroused. The boy’s communication of intention through sustained and focused attention on the therapist communicates a move towards self-agency and expression of feelings. The therapist’s focused attention on the child seems to support and help to promote intentions. There is a slow modulation (shared movement from one feeling state to another) in the “key of togetherness” towards expansion of expressions of forms of vitality in both therapist and child. The “music” in the room becomes intense and at the same time soft (*dolce*). The therapeutic dialogue seems to be constantly moving along with synchronized rhythmical turn-taking which also has a drive forward in the dialogue. At the same time there are long pauses in turn-taking that appear to hold the rhythmical beat and prevent break down of pace. The boy’s responses are direct and open, with a rhythmical flow that renders him clearer and more expressive. There was consensus here in describing the therapeutic interplay as “a shared feeling voyage”; the boy now shared his experiences of self-harm in cutting himself, and in his narrative in the following it became possible for him to share past and present experiences.

Based on a multi-layered microanalysis, the overall therapeutic interplay in the sample was seen as a narrative of an “intentional emerging process” (fig. 1). It represents the process of moving along in time together with an understanding of dyadic themes emerging from dyadic synchronizing in the interplay:

Figure 1

“Intentional emerging process”

Figure 1

“Intentional emerging process”

Discussion

Co-constructing narrative meaning

Exploring a three-layered conceptual frame to study therapeutic interplay with children supported the potential for a complementary understanding of explicit and implicit processes that such an approach offers. Melding the various bodies of knowledge, musical dynamics stood out as facilitators of change by co-creating new meaning through the micro-level interaction. Both therapist and child continually co-ordinated and regulated themselves in relation to the other’s feelings and intentions. It supports the notion that the pursuit of meaning-making at an implicit bodily level is at the forefront in therapeutic interplay with children (Lyons-Ruth, 2006; Tronick & Beeghly, 2011). The challenging therapeutic task is to identify interactive microprocesses which have developmental potential for the individual

child. Musical parameters were found to illuminate both breakdowns in intersubjectivity and microprocesses leading to intersubjective sharing. Tronick (2004) draws attention to the interchange of interactive failures and repairs as important opportunities for the child to experience agency through the therapist's continued efforts to meaningfully respond. Meaning here refers basically to the child's implicit experience in the here and now of correspondence in musical dynamics. Failure refers to the implicit subjective experience of not being seen, heard or understood. Constructing meaning in therapeutic interplay may as such be experienced as a musical process (Malloch, 1999; Trondalen, 2016), an understanding which points to the narrative aspects of psychotherapy and to musical dynamics as a means of clarifying how the process of narrating subjective experiences is improvised, developed and constructed in time. Scaffolding affective developmental experiences (Tronick, 1998) may be endorsed by an awareness of the child's musical dynamics.

Stern (2004) suggests a vision of the clinical process which emphasizes the importance of the therapist's attention to both explicit verbal content and implicit experiences. "When the two are given equal weight, it becomes just as reasonable and fruitful to intervene in response to a small implicit behaviour as about a verbalization. This greatly increases the spectrum of therapeutic opportunities" (p. 223). This is highly relevant for children with little experience of being heard or answered to, neither verbally nor nonverbally. When the boy's explicit statement in the example that he is bleeding is given equal importance as his implicit statement of lifting his finger toward the therapist, this is facilitated through forms of vitality. In the same way the therapist's comment that "such things happen" is a selective attunement to the child's feeling state as expressed nonverbally through his humming? Psychologically, this was understood as an invitation to share and go on sharing his feelings. It was seen to promote self-agency in the child and thereby increase mutual sharing through meaning-making (Harrison & Tronick, 2011). Micro-level experiences emerge as rich in real meaning evolving in real time and serve as building blocks for more complex narration of later life experiences. According to the principles of dyadic expansion, growth is viewed as an increase in complexity and coherence in the meanings the child makes of himself and others (Tronick, 1998; Sander, 2002). Forms of vitality are seen as carriers of meaning (Stern, 2010). The more the analysis was narrowed down to the smallest units in the emotion regulation example, as this was made possible through video analysis, the more concepts from musical parameters emerged as helpful conceptualizations of particular dyadic events and themes in the therapeutic interplay. In this way, the understanding of both the complexity and the multitude of possibilities in the interplay was expanded through the looking glass of musical dynamics.

Involvement and Responsivity

In a clinical study on what therapists do to help children involve themselves in therapy the therapist's *responsivity* was found as most important (Svendsen, 2007). Responsivity is defined as the therapist's attentive presence, keeping close to the child's focus of attention. As such, responsivity is theoretically based within what may be called the discourse of mutuality in psychotherapy, as opposed to the discourse of observation (ibid.).

One distinct finding in the analysis process of the example in the article was what I have called *episodes of dyadic synchronizing opportunities*. They are episodes with increased exploration from both therapist and child, which appear to promote subjectivity. In one case such an episode precedes a mismatch in synchronization and an interactive error. Next follows a modulation of tempo and intonation in the therapist's response, which leads to increased coordination in the boy's movements and an increase in emotion regulation in the boy. The multilayered analysis here describes an expansion in the boy's activity. Analysis of the music dynamics illuminated the dyadic synchronization process, and how the event of an opportunity implied that the process may proceed either way. It may either lead to an increase in synchronization, or to a decrease and lack in synchronization. Stern underlines the potential unpredictability of intersubjective exchanges. For example, that the child does something unexpected which throws the therapist into a state of uncertainty about what goes on, and previous implicit knowledge about the relationship is threatened. Stern's point is that if new relational knowledge is to emerge, the therapist must be able to reorient and tolerate the not knowing position. The therapist's attentive presence to the child must come before turning to therapeutic techniques to get out of a baffling and uncomfortable situation. Only then may something new come to light in *moments of meeting* (Stern, 2004), with dyadically expanded knowledge about oneself (Tronick, 1998). One of the findings in a previous study (Haugvik & Johns, 2008) was that the children continually addressed meaningful and personal issues, also when the therapists initially failed to respond. It points directly to the impact of the therapist's attentive presence to second to second changes in the here and now to enable a reorientation towards contingent responses and strengthening of self-agency in the child (Stern, 2000).

Based on knowledge that the affordance of new opportunities in intersubjective exchanges is related to the therapist's attentiveness and responsivity to the child's actions, the questions are; What promotes increased attentiveness to the the child's microactions and the development of responsivity in therapists? Further, how can therapists identify relational

moves which serve as new relational experiences? Music therapists are often conscious of musical and therapeutic tools, while the visual/gestural part of the interplay which plays an essential role in the child's involvement in the therapy process happens on a much more implicit level (Holck, 2007).

Intersubjective consciousness (Stern, 2004) infers the significance of simultaneous activation of subjective states when co-creating an intersubjective experience. Beebe (2002) relates of how video analysis brought attention to significant nonverbal therapeutic exchanges in psychotherapy. In a close-up videotape analysis of some therapeutic sections of the treatment with an adult patient, Beebe distinguished vocal rhythm and vocal contour (Beebe, 2002, 2005) in her own voice as significant conditions for a change in the therapeutic relationship. She thus found that video analysis brought to consciousness significant nonverbal intersubjective patterns in her therapeutic responses, which were previously not conscious to her. In therapeutic work with children who cannot speak about their emotions and are easily overwhelmed, therapists must direct attention to their own bodily reactions to the child's relational story and work with their own personal ability to tolerate and make therapeutic use of these. Such reactions may appear as micro-changes in movements, intensity, vocalizations, rhythmicity, tempo, or in avoidance of silences etc. which may challenge the therapist's own emotion regulation capacity, but also serve as opportunities for dyadic synchronization. To bring into consciousness bodily changes through musical dynamics may thus support therapeutic work. In order to be able to perceive the implicit, procedural part of the child's experiences therapists must be perceptive via their own emotions.

Musical dynamics – a way of describing lived relationship experiences over time?

A description of *musical dynamics* is an attempt to integrate a developmental microanalytic view on change in psychotherapy while at the same time keeping in mind the multiple domains of therapeutic interaction. In elaborating the subjective experience of forms of vitality, analysis of musical parameters emerges as being closest to the phenomenological experience of movement, time, space, intensity/force and intention. Describing musical dynamics emerged as one way of exploring how such forms of vitality initiate and influence lived relationship experiences over time, to understand therapeutic interaction. It is inspired by Stern's concept of temporal dynamics and incorporates the multitude of opportunities for

analysing microactions within a musical frame. In my study of videotapes changes in rhythm, tempo, intensity, vocalization or silences stood out as concrete descriptions of therapeutic interplay involved in affect-attunement, mutual attention and intentionality, as well as interactive errors and repairs leading to co-creation and meaning. It entails a view on therapeutic change processes where the therapist's capacity to communicate to the child through her body and voice has an impact on whether the child perceives the therapist as a subject who is capable of sharing mental worlds or not. How does the therapist show concretely through her body that she is really interested in the child's inner world and what the child has to tell, both implicitly and explicitly?

A study of musical dynamics may also be seen as a way of illuminating basic developmental processes, such as increased vitality. In his discussion of forms of vitality, Stern points out (p. 3) how he wants to bring attention to the significance of feeling alive as a vital basic human experience. This precedes relief of specific symptoms. For children with internalizing problems, who have given up expressing their feelings to the outside world, it is crucial that the therapist becomes aware of and regulates her own feelings to match the child's needs here and now. Illuminating relationship factors through musical parameters hence becomes a gateway into the child's inner world, and thereby helps to understand individual therapeutic development. The dynamic interrelatedness between the child's and therapist's subjective worlds and the possibility to perceive, evaluate, regulate and share mental states is at the core. To develop emotion regulation capacity, the child needs to concretely experience that the therapist is able to perceive and regulate incidents where the child becomes over- or under- (hyper- or hypo-) stimulated in the therapeutic situation. Musical dynamics may help to direct attention to micro-shifts in intersubjectivity which either impedes or expands the child's ability to actively engage in developmental processes and express feelings and thoughts.

Limitations

From a clinical research perspective, there is still little experience and research in applying musical parameters to study therapeutic relationship factors from a microanalytic perspective in child psychotherapy. Even if there is a long tradition of applying musical parameters to demonstrate psychological developmental processes in infant interactions and to some degree in adult psychotherapy, it has been remarkably absent from child psychotherapy together with a focus on intersubjective microprocesses for understanding and making

meaning of therapeutic interplay (Harrison, 2003, 2013). Therefore, there are limitations in knowledge, with a corresponding need for further research. Also, it is important to make clear that in order to ensure therapeutic goals these must be seen in a larger context where individual, contextual and cultural factors are considered. Contextual understanding and cooperation, including attachment relationships and social and cultural anchorage is essential for enabling developmental conditions which serve the best interest of the child.

Implications for further research

The main implication of a multi-layered method for analysing and describing therapeutic interaction is related to how it may contribute to an understanding of relationship factors influencing one's therapeutic method and work. This has additional implications for clinical research and for the education of psychotherapists. For those who are working within, and specializing in clinical psychotherapy, applying videoanalysis is a useful means of personal development and in integrating personal and professional understanding. An increasing number of children are referred for help with core self-developmental processes, such as attention and emotion regulation, to regain vitality and the capacity to play and mentalize (Midgley et al., 2017). The intersubjective perspective emphasizes the therapist's involvement and responsivity to how individual developmental needs and resources come to light in the therapeutic interplay (Svendsen & Johns, 2014). The importance of such relationship factors for therapeutic development entails that research which contribute to illuminate circumstances which enhance the capacity for responsivity may be helpful. Inferring that change processes in child psychotherapy involve increased emotional knowing through directly fine-tuning to the child's forms of vitality, a musical analysis of therapeutic interaction within a multi-layered microanalytic method may contribute to the therapeutic development of therapists by unravelling the need for a fine-tuning capacity in the therapist through video analysis of second-to-second microprocesses. It may also help to understand how therapeutic relationship factors prevail and may become diverse to the therapy method. Although research clearly demonstrates that human communication has basic musical features which imply musical relational experiences from the start, the ability to perceive the musical dynamics of therapeutic interactions needs to be brought into consciousness, studied and nurtured. Also, since a multilayered analysis target micro-change, it may be an enabling frame-work for capturing analogical processes in psychotherapy and address these clinically and through further research.

Conclusion

From a methodological point of view, a multi-layered method for studying small units of interplay affords a clinical tool for exploring microactions in the therapeutic relationship. From such microactions new relationship experiences are co-created in the context of how the child's story and developmental needs come to light from moment-to-moment. The objective of this study is not directed towards different therapeutic interventions and techniques as such, but towards the study of relationship factors which are seen as relevant for all therapies and therapists' practice as well as the development and training as therapists. From this perspective, there is a need to study how developmental processes, such as emotion regulation, may be enhanced and promoted through therapeutic interaction (Shore, 2006; Svendsen, 2010). A multi-layered approach affords the possibility for gaining a rich, concrete and precise description of reciprocal exchanges and events which stand out as significant. Looking at such interplay within a musical framework, suggests that this may be a valuable way to construct meaningful narratives of mutual exchanges in micro sequences. The focus on therapeutic interaction may be of great benefit also for music therapists who need a theory based description and explication of the non-verbal elements of music psychotherapy as something more than the music. It relates directly to the significance of the affective dialogue channelled through the therapist's body language, and how one speaks "musically" to one's clients, whether the dialogue is verbal or nonverbal. This part of the therapy process is something which needs to be researched further and thus gain additional knowledge of how therapists convey their intentions, feelings and mind to their client. In my opinion this encourages a perspective which forces one to see therapeutic events from both the therapist's and the client's perspective while being in interaction. Musical dynamics emerged as a useful concept for illuminating features of breakdowns and restorations of intersubjective sharing. A study of such microprocesses clarifies how these are the result of an improvised and co-created process. It is what Daniel Stern refers to as "the world in a grain of sand" (Stern, 2004), referring to lived experiences in the here and now as key events for understanding therapeutic development and change. The task is to capture and describe such nonverbal lived experiences as they unfold, together with the role of nonverbal affective exchanges in human development and psychotherapy. Through this looking glass musical dynamics may help to illuminate mutual interaction patterns involved in the development of emotion regulation in child psychotherapy and thereby expand psychological understanding. Within child

psychotherapy developmental processes may be further nurtured by an interdisciplinary dialogue. Taking a multi-layered perspective on how the child expresses her or himself in real time and try to make narrative meaning of the child's actions and feelings may hopefully contribute to a more precise evaluation of the child's intentions and needs.

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Insert Appendix here

Table 3

Example of microanalysis of an emotion regulation sample of two minutes