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ARTICLE

Forms of vitality and microanalysis in music therapy within adult autism: A clinical report

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ABSTRACT

This article examines as a clinical report two years of an ongoing music therapy journey with a young woman with autism. The different phases of the music therapy process are investigated from a relational point of view, explaining the therapeutic choices made by the therapist. The relational content of the sessions is discussed, using the theory of 'forms of vitality' as developed by Daniel N. Stern, which is applied to some detailed transcriptions of musical extracts from the sessions. The clinical report implements the theory of 'forms of vitality' as a useful tool for analysing the relational processes during the therapy sessions, while microanalysis of musical elements can usefully complement and document this approach, to support therapeutic decisions.

KEYWORDS

autism,
forms of vitality,
microanalysis,
music therapy
transcription

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Between the idea
And the reality
Between the motion
And the act
Falls the Shadow

Between the conception
And the creation
Between the emotion
And the response
Falls the Shadow

Between the desire
And the spasm
Between the potency
And the existence

Between the essence
And the descent
Falls the Shadow

(T. S. Eliot, from *The Hollow Men*, V)

INTRODUCTION

Stern's fascinating theory of 'forms of vitality' (Stern, 2010) was developed as a study to investigate the dynamic experience in the global unfolding of life; the arts (music, dance, cinema) hold an important place in his conceptualisation of this theory, because they "show vitality forms in a relatively purified form" (Stern, 2010, p. 75). It follows that the use of the theory of 'forms of vitality' in a music therapy context offers rich possibilities which are connected to the core of the psychodynamic relational approach (Postacchini, Ricciotti & Borghesi, 2014) that is at the basis of my work. This is the opportunity to study small, fleeting moments of experience that are discovered in the process of creating and developing a therapeutic relationship, and that might otherwise go largely unnoticed. I find this study very similar to the analysis of a music score (Stern himself regards musical notation as a system to "mark dynamic forms"; Stern, 2010, p. 82), and in this article I propose an integration of the two, using detailed score transcriptions from the sessions. I find the use of the theory of 'forms of vitality' together with a microanalysis of the musical material created during music therapy sessions to be very valuable in two areas: on an individual level, in analysing and improving the understanding of the relational processes at play during the sessions; on an external level, to communicate and discuss these processes with colleagues using a common, shared framework.

To demonstrate this, I will use a clinical report of a young woman with autistic spectrum disorder (ASD) who began her music therapy journey with me, and to whom I owe much as a therapist. The article is divided as follows: a theoretical and a methodological introduction to the study, the former presenting the theories mentioned in the text, the latter the procedure followed for the transcription and analysis of musical material. A description of the clinical report subject will come next, followed by the description and analysis of the relevant phases of the process developed during the sessions. The discussion section focuses on the prospects of a general clinical use of the approach discussed in this article, and the conclusions frame the results obtained in a more global perspective of generic work with autism spectrum disorders.

THEORETICAL BASES

The theory of 'forms of vitality'

This theory, developed by Daniel N. Stern, originates in his extensive observations of mother-child interactions, "where the dynamic aspects of early human exchanges appear in the foreground" (2010, p. 35). From these observations Stern constructed a vast theoretical apparatus on the development of the child's sense of self, expounded in his work *The Interpersonal World of the Infant* (1985) where he

also introduced, dealing with the ways in which the child experiences the world around him, the concept of 'vital affects', which can be considered a first conceptualisation of the theory of 'forms of vitality'.

> Now zoom in to describe the 'dynamics' of the very small events, lasting seconds, that make up the interpersonal, psychological moments of our lives: the force, speed and flow of a gesture; the timing and stress of a spoken phrase or even a word; the way one breaks into a smile or the time course in decomposing the smile; the manner of shifting position in a chair […] (Stern, 2010, p. 6)

These are the dynamic forms to which Stern refers, and they can be described using some dynamic terms that express "elusive qualities" of experience, for example: "accelerating", "tentative", "exploding", "halting", "pulsing", "fading", "tightly", etc. (quoted randomly from the list provided in Stern, 2010, p. 7). In other words, these are the dynamic qualities that the author identifies as the object of affect attunements (through amodal perception, which is the capacity to "receive information in a sensory modality and translate it in some way into another mode sensory"; Stern, 1985, p. 66), which play a fundamental role in the development of intersubjectivity (Stern, 1985, 2010). The transition from the definition of vital affects to the theory of forms of vitality took place over many years of work and research, during which Stern addressed the far more universal problem of how human beings express their vitality, which he summarised in his work *Forms of Vitality: Exploring Dynamic Experience in Psychology, the Arts, Psychotherapy, and Development* (2010). Here Stern states that "vitality is a whole. It is a Gestalt that emerges from the theoretically separate experiences of movement, force, time, space and intention[/directionality]" (2010, p. 5). That is, he identifies these "five dynamic events linked together [...] [which] taken together give rise to the experience of vitality" (2010, p. 4). These amodal characteristics allow a description of forms of vitality, shifting the investigation to the communicative/expressive mode of the moment, rather than to its purpose or motivation. From a neuroscientific point of view, the theory of forms of vitality is based on arousal systems and mirror neurons (2010).

Music therapy model of reference

The music therapy model within which I work (and which is therefore used in the sessions described in this study) is that of the psychodynamic-relational model typical of the Italian school (Postacchini, Ricciotti & Borghesi, 2014), where the therapist-client relationship is born and develops within a free musical interaction, in a predominantly non-verbal and non-directive context. Stern's theories hold an important place in this model, especially with regard to affect attunements, which in professional practice become technical elements for inter-subjective musical dialogue. The reference to forms of vitality in this operational model is therefore implicit.

Other theories of reference

Theory of attachment

In my way of reading the relationship that develops during the sessions, an important role is played by the theory of attachment as developed by Bowlby (1969, 1973, 1980), together with the concept of secure base (Bowlby, 1988). The term 'attachment' in this theory means the nature of the bond that unites a child to the mother or to the caregiver, which is fundamental for a harmonious development at a social-emotional level, especially in the field of emotion regulation (Holmes, 2014); this type of attachment is called 'secure'. In the field of autism spectrum disorders, some studies report that these disorders are correlated with a disorganised style of attachment (Capps et al., 1994; Naber et al., 2006; van Ijzendoorn et al., 2007), specifying that a greater severity of the disorder is related to greater insecurity in attachment (Naber et al., 2006). The term 'disorganised' indicates a style of attachment that includes "a variety of behaviours that appeared to reflect a disruption in the coherence of the infant's strategy for seeking their caregiver when distressed", such as sequential/simultaneous displays of contradictory behaviour, undirected, misdirected, or incomplete movements and overt signs of disorientation (Reisz, Duschinsky & Siegel, 2018).

Neurosciences

I argue that a relational approach to music therapy practice can greatly benefit from the awareness of the neurological processes involved, as further support for one's clinical decisions. The neuroscientific insights briefly described hereafter offer a useful perspective on the most relevant dynamics in the case studied: fight/flight dynamics and levels of social anxiety. Since the arousal systems play an important role in these processes, which, as outlined earlier, constitute the neurological basis of the theory of forms of vitality, this level of analysis is also useful for understanding the point of view in which this article is presented in its entirety. From a neuroscientific point of view, these social phobia patterns are activated by subcortical limbic regions of the brain: a "phylogenetically old danger system" (Tillfors et al., 2001, p. 1225) comprising the amygdala, a region which holds a central role in memory, affective regulation and social relatedness (Cozolino, 2014, p. 305). Amygdala activation is responsible for the hormonal cascade that will ultimately result in a mobilization of the body for fight/flight responses. This process is managed by the activation of the hypothalamic-pituitary-adrenal axis (Cozolino, 2014, p. 272). Next to this neural system based on the role of the amygdala, which is focused mostly on the evaluation of stimuli regarding immediate safety and fear, the state of defensive preparedness (anxiety) for anticipated or potential danger is the result of the action of the bed nucleus of the stria terminalis, a limbic forebrain structure which plays a key role both in the regulation of the hypothalamic-pituitary-adrenal axis and in mediating anxiety and stress responses (Walker, Toufexis & Davis, 2003, p. 212). The activation of this complex system is modulated by oxytocin, a hormone secreted by the pituitary gland, which has been called "the great facilitator of life" due to its role in (among other things) the dynamics of bonding, love, trust and anxiety reduction, so that many believe that oxytocin abnormalities may play a part in autism disorders (Lee, Macbeth, Pagani & Young, 2009, p. 25). Oxytocin release is facilitated by the contact with a parent or caregiver, whose proximity thus modulates amygdala activation fostering the lowering of anxiety levels and the

coping with fear, as well as enhancing the experience of attachment security (Buchheim et al., 2009; Lee et al., 2009).

METHODS OF ANALYSIS

Relevance of the theory of forms of vitality

Given the relevance attributed to the musical interaction itself within my music therapy model of reference, it is very important to be able to evaluate the music created during the sessions with methods that give a measure of the quality of the relationship at play. The theory of forms of vitality is particularly relevant for our work for this reason: in the arts the forms of vitality find a particularly pure expression and a leading role (especially in the performing arts: dance, theatre, cinema, music; Stern, 2010). In music, notational systems communicate the dynamic executive modes of a musical piece, and therefore evoke forms of vitality. Reviewing with a musical ear the list of dynamic terms given above, each of them can be read as a possible mode of execution of a given musical episode; some of them even have graphic or literal translations in standard notation (for example: "accelerating" with *accelerando*, "fading" with ). Stern also argued that "the basic methods in improvisation music therapy all require the use of vitality forms to share or interchange experience" (2010, p. 140). From a music therapy point of view, the theory of forms of vitality therefore represents a possible link between musical analysis and the relational context within which this music was created, since the dynamic qualities highlighted by the forms of vitality are amodal, and thus independent of the expressive modality that makes them manifest.

Musical transcription and microanalysis

In this article, I refer to microanalysis as the detailed analysis of short sequences of music produced during therapy sessions, aimed at investigating microprocesses, i.e., "processes and changes/progressions within one session of music therapy" (Wosch & Wigram, 2007, p. 22). As such, microanalysis is both a very powerful and very demanding tool. It is powerful because it permits the detailed investigation of a musical interaction and the analysis of its single component parts, in order to obtain useful data for the evaluation of psychodynamic processes; however, given the disproportionate quantity of work involved, both in terms of its general use and specifically for the analysis of collected data (the amount of which is generally very great), its systematic use is normally precluded (unless within the field of specific research).

In the case under consideration in this article, I considered this kind of examination useful since I was lucky enough to have the video recordings of two improvisations in my opinion particularly representative of the client's journey, the formal nature of which (limited tonal material and variance of timbre, a structure mostly of a dialogical kind where the moments of music together are almost absent) moderately decreased the complexity of the work. The two transcribed excerpts (one for each improvisation) were chosen, again taking inspiration from Stern's writings, specifically, from the method of his 'microanalytical interview' (also called 'breakfast interview'; Stern, 2004), where it is

assumed that any part is a complete representation of the whole (and therefore it deserves as detailed an analysis as possible); that is, the extracts were chosen simply by ensuring that there were enough interactions to justify a thorough study.

The material chosen was transcribed using standard notation, for two reasons:

1. I believe that standard notation is suitable for the type of transcribed musical material, peculiarities of which are more related to aspects of pitch and rhythm/dynamics (which this notation is able to adequately communicate, for the purposes of this analysis);
2. it seems appropriate to me to use a type of notation that, on the one hand represents a large number of details concerning the musical material and, on the other, is immediately understandable by every music therapist with a consolidated traditional music training, without having to learn to decipher a new notational system.

Subsequently, the score thus produced was analysed, both in a formal musical sense (identifying structures, repetitions, variations, etc.), and considering the five parameters of the forms of vitality in Stern's theory (movement, force, time, space and intention). Wosch and Wigram (2007, pp. 20-22), elaborating on Schindler's work in psychotherapy, identified four time levels of process analysis, in a scale of increasing detail: the analyses discussed in this article fit within the third level ("therapy event: for example a short verbal, musical or other non-verbal phrase") and the fourth ("moment-by-moment experienced change"). This description of the musical interaction, obtained from an application of the theory of forms of vitality, allows the passage to an amodal understanding of the experience underlying the examined music. In this way the qualities highlighted can be compared and related to other relational aspects at play in the sessions (or even extra-setting), in order to conduct cross-evaluations; in the case of the study in question, these assessments represented both a confirmation of the deductions obtained on the basis of other theories (such as attachment theory), and a constant testing and control system.

R.'S CLINICAL MUSIC THERAPY JOURNEY

The client

R. is a 21-year-old woman diagnosed with ASD. She is not able to communicate verbally and she is only partially independent. She is able to understand and respond to verbal requests of various kinds. Her obsessiveness shows mainly in her attachment to routines and structured activities: she rarely shows individual initiative and she reacts to novelties with high anxiety levels, which can result in crying crises: usually self-aggressive, although occasionally with hetero-aggressive acts (e.g., trying to hit an operator), or aggressive acts directed towards her immediate surroundings.

Global picture and objectives

R. entered the day centre in February 2016, attending the structure for half a day three times a week. The intervention requested by the medical staff is directed towards the cognitive-behavioural,

communicative, social-relational and motor areas, with special care being paid to daily independence. The general objectives of the music therapy clinical work, common to all the clients in the centre, are:

1. To experience sound and music as a means of self-expression and to engage in nonverbal relationships.
2. To develop socialising and sharing skills
3. To empower listening skills toward oneself, others and the environment.

For R., the music therapy intervention aims to improve the communicative-relational skills whilst reducing dependency on an adult caregiver, encouraging the management of anxiety in unstructured waiting situations.

R. received her first music therapy session in October 2016, and at the time of writing (November 2018) her second year of music therapy work had just been completed. The weekly sessions (which last approximately 30 minutes) take place in a room exclusively dedicated to music therapy: the setting is equipped with various musical instruments. Among these, and figuring in the transcriptions analysed in the article, are a digital piano and a standard tuned guitar. With regard to the clinical material studied in this article (periodic video recordings of the sessions), the centre that hosts R. holds the consent of the parents for the realisation of the recordings; their use in this article has been approved by the local health management.

The following presentation of the clinical report is an account of my personal experience of the first two years of music therapy work with R.

Phase 1: a cycle of endurance training

During the preliminary stage of the first three sessions, R. remained inside the setting for the whole duration of the session, but with almost no relational contact. When I was first introduced to R., the educators were using a PECS communication system with her, and I was given cards with instrument names on them as a way to agree on which instrument was to be played. To suggest an instrument, e.g., the drum set, I would point at the relevant PECS card. R. would immediately answer by tapping the card with her index finger, moving to the instrument and beginning to strike it with quick bursts of sound, only to abandon it a few seconds later. The same pattern was also evident in activities outside the music therapy setting: she would “colour” outline drawings on sheets of paper, furiously passing the pencil over the whole drawing with total disregard to the boundaries of the figure, finally throwing away the sheet of paper when she considered it coloured enough, and then pass without pause to the following sheet in the pile, until she had completed her duty. Starting with the fourth session, her capacity to remain in the setting started to drop dramatically (she would literally escape from the room, often in tears) so that one month later the session duration was reduced to two minutes (ninth session; see Figure 1).

During this phase (sessions 1-9), my experience of sitting with R. suggested a person with high anxiety levels negating any pleasurable, gratifying communication. It was as if the autistic disorder and the consequent lack of comprehension of the surrounding world made everything frightening and potentially harmful—every social request, be it explicit or implicit, was a direct source of distress. In

order to cope with this, R. would endeavour to comply as quickly as possible with any requests without asking questions. Possibly her previous educational training had empowered her with tools to exert this defensive conduct towards daily social events, in "efforts to survive experiences which may be confusing, disorienting, or frightening" (Moreno & O'Neal, 2000). The experience of the music therapy sessions soon became unmanageable for R., probably because there was no way to avoid the relational aspect (and the stress) of the situation using strategies she had developed elsewhere during her previous experiences, with the result that her time spent in the setting fell almost to zero.

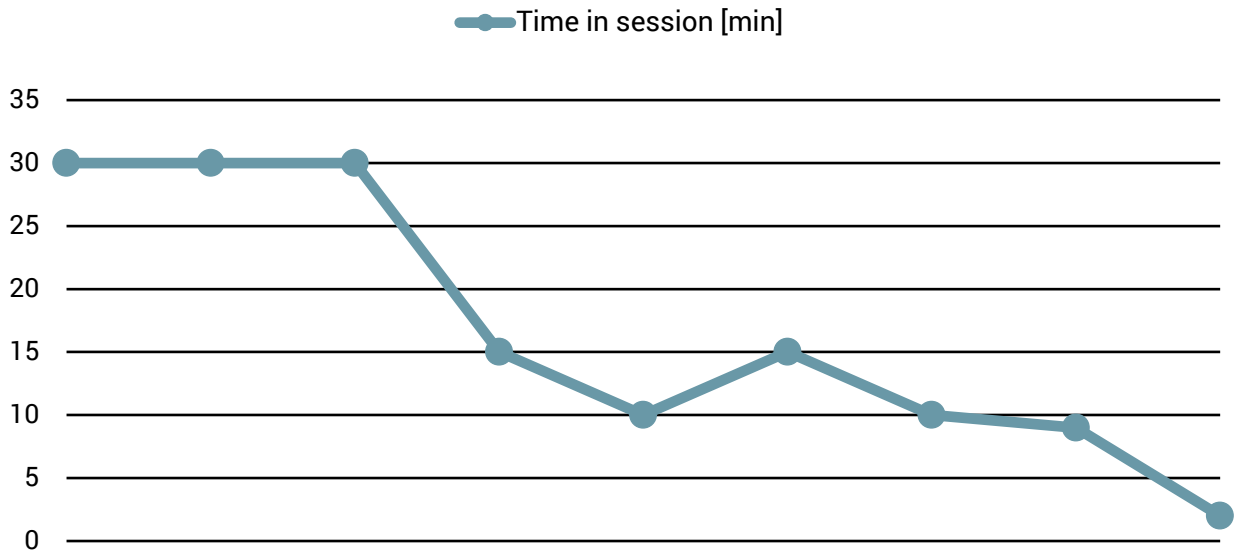


Figure 1: R.'s permanence in the setting for her first 9 music therapy sessions

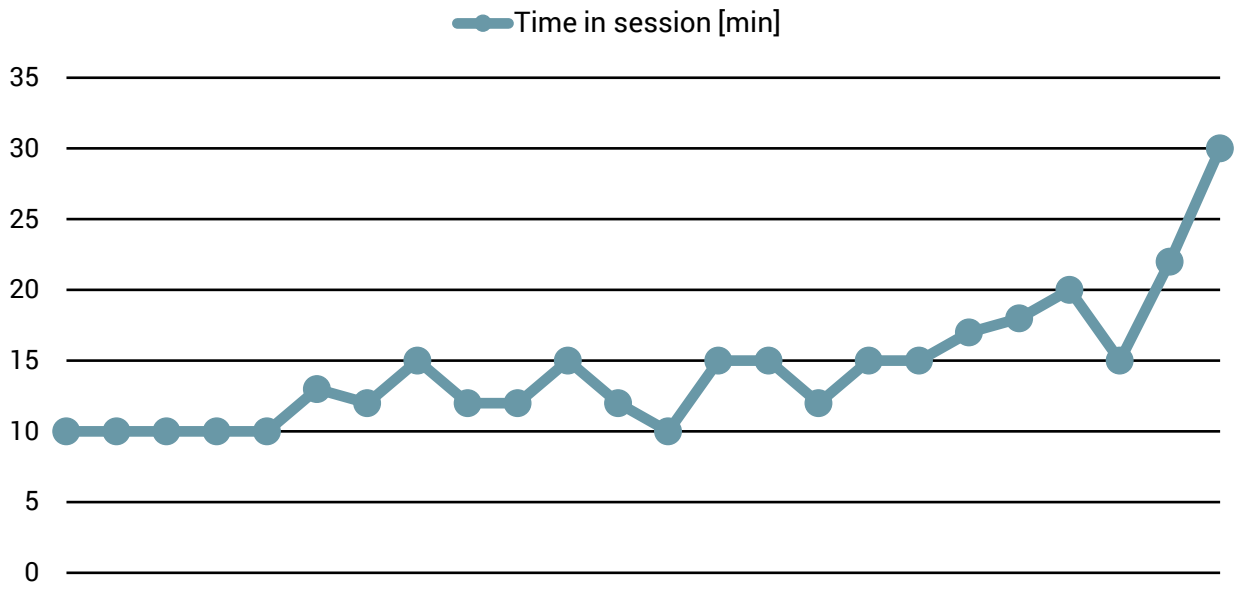


Figure 2: R.'s permanence in the setting for the 24 sessions with an educator present (sessions n. 10—33)

At this critical turning point in the therapeutic process, it was agreed in personal supervision and discussion with educators working in the centre to provide R. with an educator within the setting during the sessions, and to agree with her that the sessions were to be only 10 minutes long, during which time she would be obliged to remain inside the setting. The therapist would lock the door at the beginning of the session, keep the key and unlock the door to let R. out at the agreed time; the rest of the session time was to be spent together with the therapist elsewhere in the centre, without engaging in any particular activity. The educator's presence in the music therapy sessions provided R. with a secure base of a kind (after Bowlby, 1988), which could counteract her lack of identity in an otherwise unknown situation (during the initial establishing of a relationship with the therapist). When R.'s tolerance would allow for it, the therapist would extend the agreed session time.

The decision to oblige R. to remain in the setting for an agreed time was taken together with the multidisciplinary team, with the intention of providing R. with a very high containment, capable of supporting her in defining the time and space of the sessions. The effects of this practice have been carefully monitored and discussed from time to time, sharing with R. the various aspects of the process (motivations, duration). This practice is sometimes used in the centre in similar cases in other activities.

This process lasted for 24 sessions, during which time R.'s permanence inside the setting slowly increased (see Figure 2). Finally, this made the continuing presence of the educator unnecessary. Almost one year of therapy sessions later, the circle had closed, and R. was again spending all the available session time inside the setting. The significant reduction in the levels of general anxiety probably originated from her gradually feeling less threatened by the music therapy session, and this in turn could be an indication that she was beginning to make sense of the experience itself.

During the work carried out up to this moment, two types of behaviour of R. were highlighted, which remained constant throughout the whole process described in this article: they are the behaviours that I call the 'copying gestures' and the 'default stance'. A copying gesture occurs when what R. plays has a high external similarity with the previous gesture made by the therapist (for example, playing the same key on the piano). These gestures usually appear immediately with no time between the original and the copy. My reading of these gestures is that R. is trying to reproduce as accurately as possible an action of the therapist, interpreting them as a tentative 'stealing' of the therapist's personality to fill the self-consciousness void arising from a lack of identity (these can be seen in detail later in the music transcriptions).

Sometimes instead of copying an action R. makes no movement or external reaction, maintaining her previous stance. I refer to this as her default stance: sitting on the chair without leaning back, softly touching her (almost) closed eyelids with her fingertips—I experience this stance as one of total introversion and defence.

Example of music from this phase

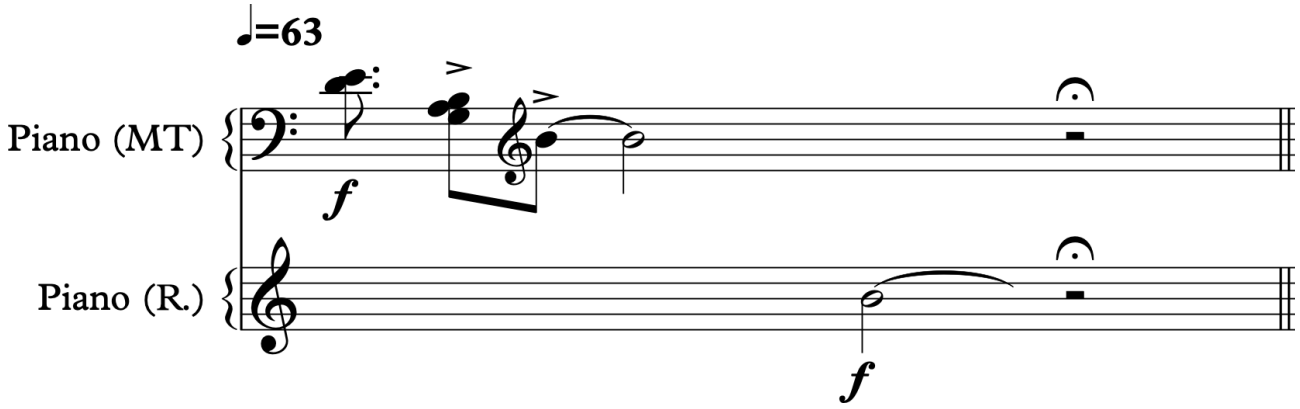


Figure 3: Excerpt from a digital piano improvisation

Figure 3 shows the conclusion of a larger section examined below, taken from a piano duo improvisation. The therapist performs three figures with rather high (*forte*) intensity, concluding on a single note (B). R. plays the exact same final note, with a dynamic intensity similar to that of the therapist; a prolonged silence follows. Examining the parameters of the forms of vitality expressed by the two, one notices how the force parameter is almost identical: that of R. is slightly lower than that of the therapist. In addition to this, the two movements end in the same place, i.e., on the same key of the piano: the movement of the therapist finds there the conclusion of a phrase formed by two other notes, before ending on the B note; that of R. is a single movement with a single note played. Space is defined by the tonal amplitude of the music played (in both a sonic/expressive sense, as well as physical distance between the piano keys) and by the pair at the piano (as 'place of action'). The time of the therapist is extended enough to allow the articulation of a phrase of three elements, sufficiently spaced from each other that they can be heard distinctly; that of R. is limited to the execution of a single note.

To interpret this musical exchange following these considerations, we can proceed backwards. The final silence is important, and maybe indicates the conclusion of a relational process: this conclusion is introduced by R.'s copy of the therapist's final note. Only of the final note: the rest of the vital form of the therapist is ignored by the copying process, just as accurate in what it includes as clear in what it excludes. The slightly diminishing muscle tone (even compared to what directly precedes this musical phrase, which will be discussed later in this article) may indicate that the conclusion is at least partially intentional: that is, it suggests a relaxation of the tension previously developed, a sort of relief for having been able to provide a consistent performance, and then rest. In conclusion, the intention of this final gesture can be read as a refusal to continue the relationship and a search for a shelter: in fact, R., after playing the last note, returns to her default stance.

I explain in the analysis of subsequent music how this process will change over time, proposing larger copies (not just the last note) and/or major variations (i.e., imperfect copies, or even original material).

Data interpretation

The traits dealt with here (as well as others dealt with later in this article), suggest that probably R. is an individual whose object relationship is not developed, making it difficult for her to differentiate between self and non-self. If this interpretation is correct, the difficulty that R. experiences in perceiving the world as something detached from herself (an early stage of object relation) would make it extremely difficult for her to grasp the social intention coming from somewhere outside of her. Her way to experience the world would be radically influenced by this difficulty in feeling herself, and feeling herself in relation to the other (the "falling of the shadow" in the opening Eliot poem).

This lack of identity consequently makes her experience of social dynamics very complicated: a *relational hell* she cannot make sense of. It should also be considered that her autistic disorder probably inhibited the development of a secure attachment during the early stages of her life, resulting in a disorganised internal working model (after Bowlby, 1969, 1973, 1980; regarding the relationship between autistic spectrum disorder and attachment security, see earlier section: 'Theory of attachment').

Phase 2: in search of the self

After becoming able to spend all the session time within the setting, the next phase of R.'s therapeutic journey was slowly to develop a sense of self (this long and painful process is still ongoing). This is the main goal the music therapy sessions aimed for, but the first phase had been a training in endurance within unstructured situations and this had had its effects outside the setting; R. was reported to have gone a long way towards coping with such situations. During that process, the rare relational moments were few and far apart; between them occurred longer and harsher disruptive behaviour. In time this frantic behaviour decreased in intensity, even though the gestures frequently enacted during those moments (the forms of vitality) remain one of her distinctive traits. Her gestures tend to be explosive: fast, brief and intense (for example, suddenly picking up a mallet, playing a drum *fortissimo* for a few seconds, then immediately putting the mallet back). In between, as the relationship with the therapist developed, there appeared a softer side to R., made of brief physical contacts with the therapist (a small tender hug, leaning head to head), manifesting different forms of vitality (see Table 1). Even in the midst of the most extreme crisis characterised by screams and self-aggressive gestures, R. would always wander around the room and return periodically to the therapist, either sitting on his lap or trying to hug him.

The first important behavioural change during this phase was the importance given to silence. Sessions started with a prolonged, intense period of silence and stillness, as long as 10 minutes or more during the first months of solo therapy (from session n. 34 onwards). The duration of this silence decreased about one year after beginning the solo sessions; it still fluctuates, depending on the anxiety level at the outset of the session (and by what might have happened in her personal life prior to the session: school, family life, monthly cycle, etc.). Lately it has outlined a steep declining curve, as R.'s relational behaviour has supposedly begun to increase in global understanding and general intention: the last sessions show silences slightly under 1 minute.

My interpretation of sitting next to her in silence, is that R. and the therapist would share this emptiness that allowed her anxiety levels to lower (highlighted by the gradual slowing down of the breathing cycle). This functioned as a transition from one supposedly well-known situation of accepted social conduct and a different one, free and de-structured. Because of this function of silence, the therapist never interrupted it: it ended when R. spontaneously performed an action. After this action (e.g., playing an instrument) more silence or a relational moment could follow.

Silence with R., however, has a broader meaning. While the initial session silence is transitional as described above, once it is brought to an end by the start of any activity, other silent moments appear in a seemingly random fashion throughout the session. They are most obvious when they appear within the course of a musical activity. R.'s usual behaviour is to remain in her default stance, from which she will periodically come out with either a harsh or soft gesture, and then 'return home'. In between two of these outgoing gestures there might be a length of time where sometimes a long silence occurs: its duration is often far beyond the accepted social delay of action/response, i.e., anything from 10-30 seconds and more. But these long silences are far from being vacant, empty frames in the relational space; they usually are followed by an action that is directly connected to the therapist's previous action: that is, the answer is coherent with the relational process in act, but the processing time may vary greatly.

Analysis of the forms of vitality from this phase

Parameter	"Harsh" behaviour	"Soft" behaviour
Movement	Minimum gesture using one or two hands only at a time; reaching out and return	Complete gesture using multiple body zones; reaching out and return
Time	Brief, as short as possible	Medium, less hurried
Force	High; narrow intensity range	Medium/low; medium intensity range
Space	Closed within the dyad	Possibly open to include other objects
Intention	Bringing the circumstance to an end (contrasting)	Getting closer (confirming)

Table 1: Parameters of forms of vitality (Stern, 2010): Comparison between the two typical aspects of R.'s behaviour, also taking into account Parker's "sound organisation" model (2012)

The perspective of the forms of vitality, used in Table 1 to examine in detail the two types of behaviour mostly manifested by R. introduced previously, provides interesting insights. It is evident that in the two types of behaviour all five parameters assume different, often opposite values: this can give an idea of the scope of R.'s internal world, which is not limited to a single type of behaviour, but which provokes also spontaneous actions of opposite qualities. This offers an important element of evaluation for the multi-disciplinary team.

Taking an in-depth look at the five parameters in Table 1, the first four parameters describe the behaviour itself fairly well, while the last, 'intention', is the one that brings us closer to speculating on the motivations of the act. In the analysis I propose, it derives largely from the examination of the parameters that precede it. In detail:

- Movement: the analysis refers to the physical part of the action, its trend and its entity both in amplitude, and in quantity of body parts involved.
- Time: absolute duration of the action; the qualitative evaluation (how this time is used) derives in part from the analysis of the previous parameter.
- Strength: expressed in terms of muscle tension/relaxation, both as an absolute value and as a profile in variation.
- Space: the use of space as expressed by the action in its entirety. 'Closed within the dyad' means that the action is entirely included within the proximal relational space identified by the therapist-client dyad, like a bubble, the boundaries of which are not easily crossed; if the action opens the spatial perspective to include, for example, other objects in the relationship, we have a different vital form, which shows willingness to share more of the experience of the moment.
- Intention: this is the most difficult parameter to evaluate and potentially the most relevant at the clinical level (other circumstances being equal). In this case, the evaluation offered is relative to the relational sphere, and is a sum of the evaluations of the previous parameters, combined with complementary considerations born from the observation of the session recordings and the therapist's own feelings as reported in the session protocols.

Examples of music from this phase

Considering the music produced at this stage of the journey, R.'s production almost always reflects harsh behaviours: the soft behaviours are to be identified in non-musical behaviours (for example, getting up and touching the guitar, to suggest using it). With regard to the harsh behaviours in the music, these reflect quite faithfully the description offered by Table 1.

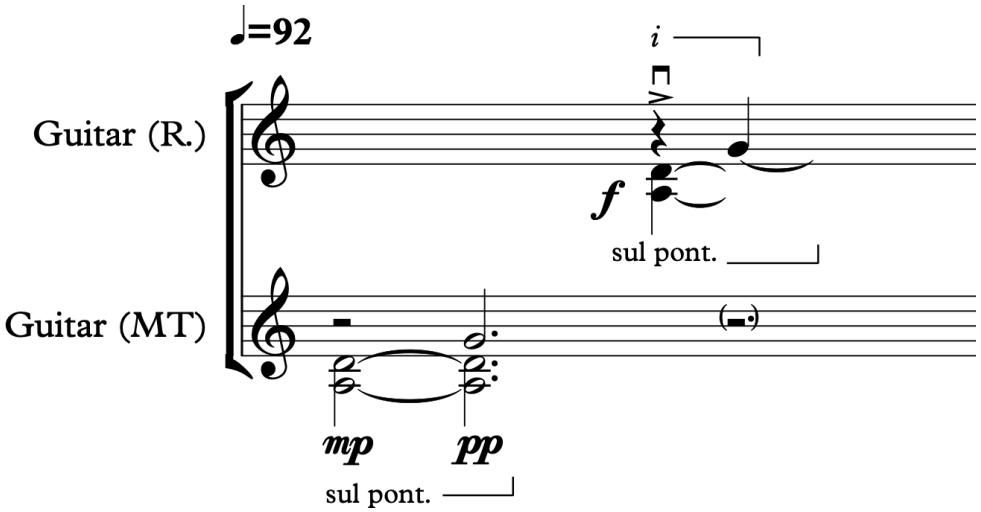


Figure 4: Excerpt of a guitar improvisation

An example is in Figure 4, which represents an interaction on the guitar, taken from a larger sequence that will be discussed below. R. strums open strings using a single finger, with intense force (slightly lower on the second note), playing the same tonal interval proposed by the therapist immediately before. Considering the parameters of the vital form expressed by R., there is therefore a

minimal movement, a slightly diminishing high muscle tone, a short time of two very close events and a space closed within the dyad (there is in fact no contribution of new material, neither physical nor musical).

This short passage is a perfect example of what I call a 'copying gesture'; what is perhaps most interesting to note here is the different articulation of the identical tonal material played by the therapist and by R.: while the therapist plays first a bichord (i.e., using two fingers simultaneously) with a relatively low intensity, and then a single note with a decidedly lower intensity (using a more "delicate" movement), R. uses a high muscular tension with only a small decrease on the second note, with an identical articulation for both the bichord and the single note. These observations can be useful for evaluating the 'intention' parameter. The dynamic profile and the length of the figures played by the therapist may suggest a certain calmness, where the bichord sets up the character of the atmosphere and the single note expands it without altering it, enriching it with a delicate sound and creating an open chord of fourths. It is possible that in the therapist's intention, the openness of this chord represents an availability towards the outside, as it suggests something still undefined, which can go in different directions and which is open to suggestions and integrations. The relaxed posture of the therapist (visible in the video) matches this reading, remaining open without alteration. R. plays the same notes, but her tone is harsh due to the high muscle tone; the second note is added to the bichord without waiting and with its same character; her posture is the one that has been described above as defensive, the movement is a return. For these evaluations, the intention of R. can be read in Table 1 in the 'harsh behaviour' column, as an action that tends to bring the relational circumstance to a conclusion, rather than to a confirmation. On the other hand, however, the presence of a slight decrease in muscle tone and a not extremely compressed time, suggest a non-extreme harsh behaviour, and therefore levels of anxiety still within a range tolerable to R.

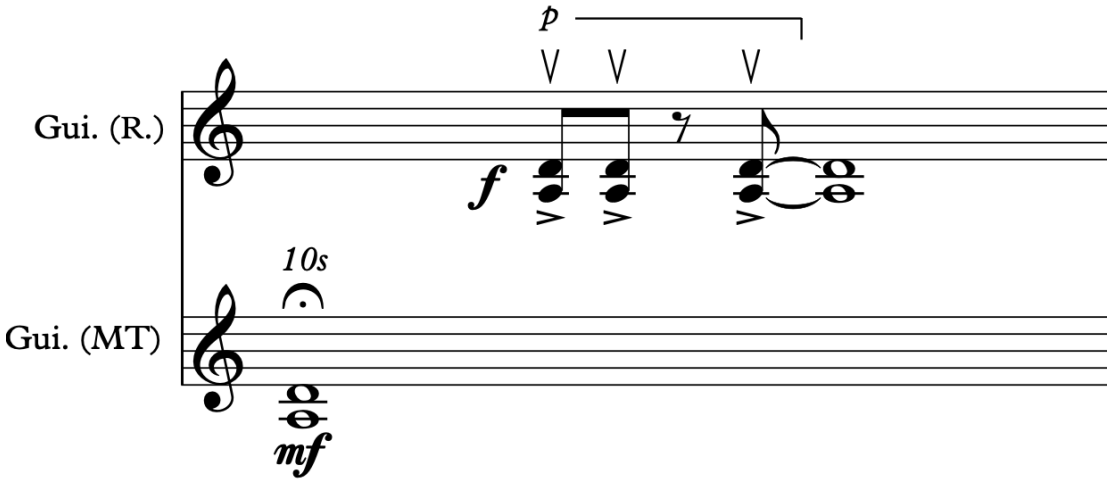


Figure 5: Excerpt of a guitar improvisation

The excerpt from Figure 5 is the musical exchange immediately preceding the one examined above (Figure 4). The therapist plays a bichord (fourth and fifth string), and lets it resound indefinitely. After about 10 seconds, during which R. remains in her default stance in silence, she plays the same bichord quickly three times, using the thumb of her right hand in a movement from high to low pitch. This passage is an example of an encoding/decoding process that takes a long time to produce a

coherent response, as about 10 seconds pass between the stimulus and the response. At the level of parameters of forms of vitality in play, apart from time, the most important difference is in the movement: that of the therapist is a single movement, which uses a small shift of two fingers simultaneously to play the notes. The movement of R. is repeated three times quickly, using a single finger. There is no new contribution of tonal material, but the rhythmic variation (due to the different articulation of the movement) differentiates the evolution of this form of vitality from the typical gesture of copy: it starts as a copy, but evolves differently, with a personal articulation (there is also a pause that breaks the otherwise homogeneous flow of notes). The muscle tone of R. (force parameter) is decidedly higher than that used by the therapist, and this can give us an idea of R.'s internal tension at this moment. It may be interesting to note that the improvisation continues with the passage previously examined in Figure 4, where a decrease in the force involved was evaluated. The subsequent musical exchanges (visible in the complete transcription of this section in the Appendix) are oriented towards a stabilisation of muscle tone (force parameter) and the contribution of more significant variations in the articulation (movement).

Data interpretation

These encoding/decoding processes that constantly go on inside R. have their own internal profile, and it might be interpreted as total detachment in as much as they require an overtly long processing time (in social terms). What influences directly or indirectly the internal profile of such processes is arguably connected with sensory experience (Robertson & Simmons, 2015), triggering anxiety regulation systems and ultimately fight/flight responses. For a neuroscientific point of view supporting this interpretation, see the 'Neurosciences' subsection above.

Putting it all together: The current work path

The scenario that I have illustrated suggests to me a person who has difficulty making sense of (and of being understood in) social situations. This, which could represent an unbearable stress, is partly circumvented by the use of simple encoding/decoding structures which enable R. to give a coherent reaction to a given stimulus and which is enhanced by the therapeutic human relationship which supports her learning how to cope in these situations. These outcomes from the music therapy work have been of great importance for R.'s quality of life: they create a different, more understanding behaviour towards her by educators and similar figures and a deeper understanding of her own needs.

Understanding the implications of no longer performing an action simply on request allows for more time to encode/decode the stimulus and afterwards to give an adequate response. R. is gradually becoming able to differentiate between external request and her own reaction.

This is evident in the gradual decline of the copying responses in favour of the possibility to simply wait: that is, of letting an external event unfold without the urgency of responding to it (which used to negate the difference between the event and the reaction). In musical terms, R. is consistently beginning to let me play for her and to intervene occasionally without copying, in a creative way. This is also connected to a development of a conception of time within the setting, a process following on that of the sense of space conquered and defined during the previous therapeutic phase.

ADDITIONAL MUSIC TRANSCRIPTIONS ANALYSIS WITH FORMS OF VITALITY

For a deeper analysis of the forms of vitality involved in the process, I will now examine some musical transcriptions of musical extracts from various stages in R.'s music therapy journey. These excerpts[1] have been transcribed from video recordings of the sessions. The times indicated (mm:ss) refer to the video file: they indicate approximately the time elapsed since the beginning of the session.

The first excerpt dates from 17th February, 2017: slightly more than two and a half months into therapy, during the therapist and educator phase. In the time frame transcribed, R. and the therapist are sitting at the digital piano (the educator is on the other side of the room, behind the drum set, sometimes softly playing a low E note on a guitar — not notated).

Section A (Figure 6) documents the therapist beginning a sound dialogue with R. after a prolonged silence. Most of the notes played by the couple are in the form of clusters; to each sound (or pair of consecutive sounds) by the therapist R. responds with clusters in the same tonal range. The dynamic profile and the rapidity of the sounds produced follows an almost linearly increasing trend throughout the entire section. After the final intervention of the therapist, there is a silence of about 20 seconds.

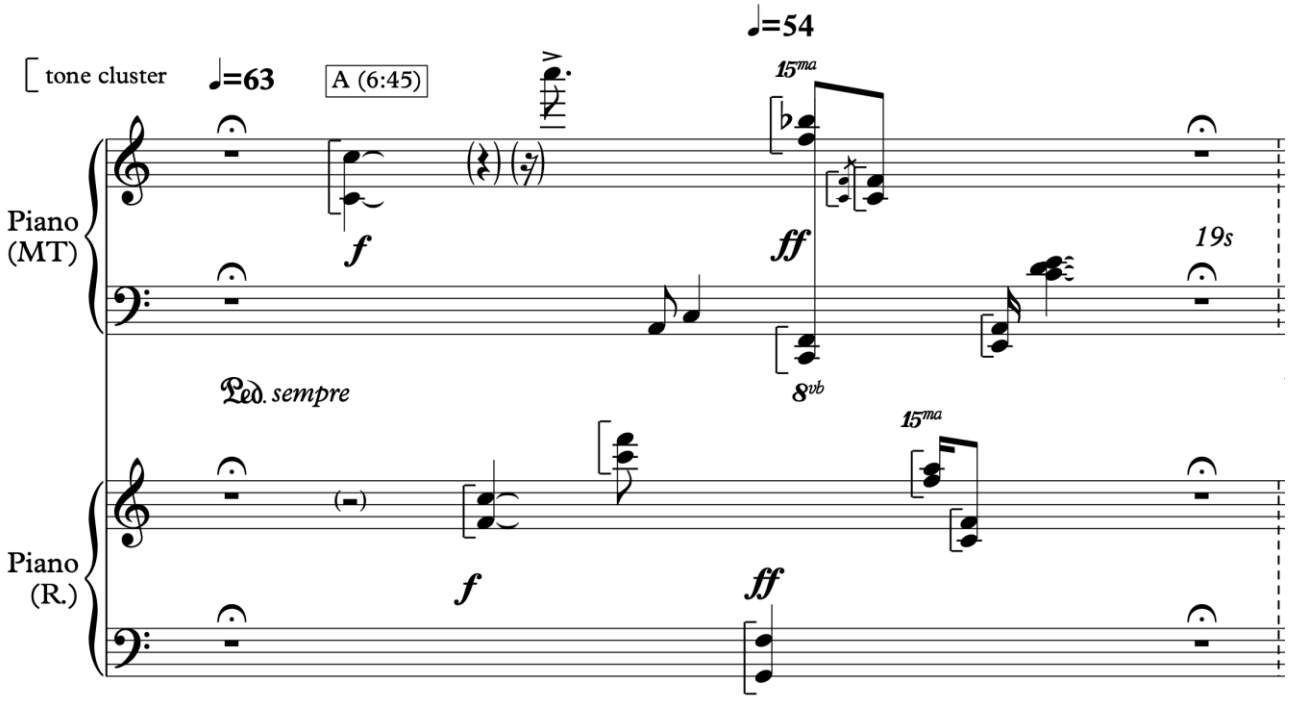


Figure 6: Section A of transcription (17th February 2017)[2]

Looking at the score, one can see how the evolution of the forms of vitality expressed by the couple follows a parallel profile of good reciprocal mirroring. The duration of the notes, that is the time in which the movements are expressed, decreases rapidly (from quarter notes, to eighth notes, to finish in sixteenth notes, leaving less and less space between the action and the response), while the muscle tone increases (passing from *forte* to *fortissimo*); R. always performs in 'exit and return' movements.

[1] For the explanation of the notation and the complete extracts with more details, please see the Appendix.
[2] For the complete transcriptions, please see the Appendix.

These are examples of what I have referred to as 'harsh behaviour'. In fact, the parameters of the forms of vitality expressed by R. in this passage closely reflect the description given in Table 1 of this type of behaviour: that the intention is to bring the circumstance to an end is an interpretation supported also by the silence that occurs when the therapist stops responding to R.'s actions. But this section is also a typical example of a copying process at play: the therapist suggests some notes, and R. responds by trying to copy the same notes, often succeeding quite perfectly in her aim. The only intervention of the therapist she cannot completely copy is the one in which he plays the two extremes of the piano at the same time: R. will hit only her side, that of the high register. It is possible that this inaccuracy in the copy further raises R.'s internal levels of anxiety, blocking her in her default stance, and de facto stopping the process: in fact, R. does not respond to the following response of the therapist.

One study (Rochat et al., 2013) reports how individuals with ASD (when compared to non-ASD individuals) are perfectly able to discern an action's goal, but show a significant higher error ratio when trying to detect differences in the way the action is carried out (the manner of the gesture: e.g., vigorous vs. gentle). The action's aim (intention) is understood but the rest of the vitality form parameters (the role and purpose of space, force, time, movement) are overlooked. If we look at R.'s way of copying, we can see how the general goal of the action is achieved accurately, almost always copying the exact notes but more loudly and in a faster tempo, usually with a different use of space and movement.

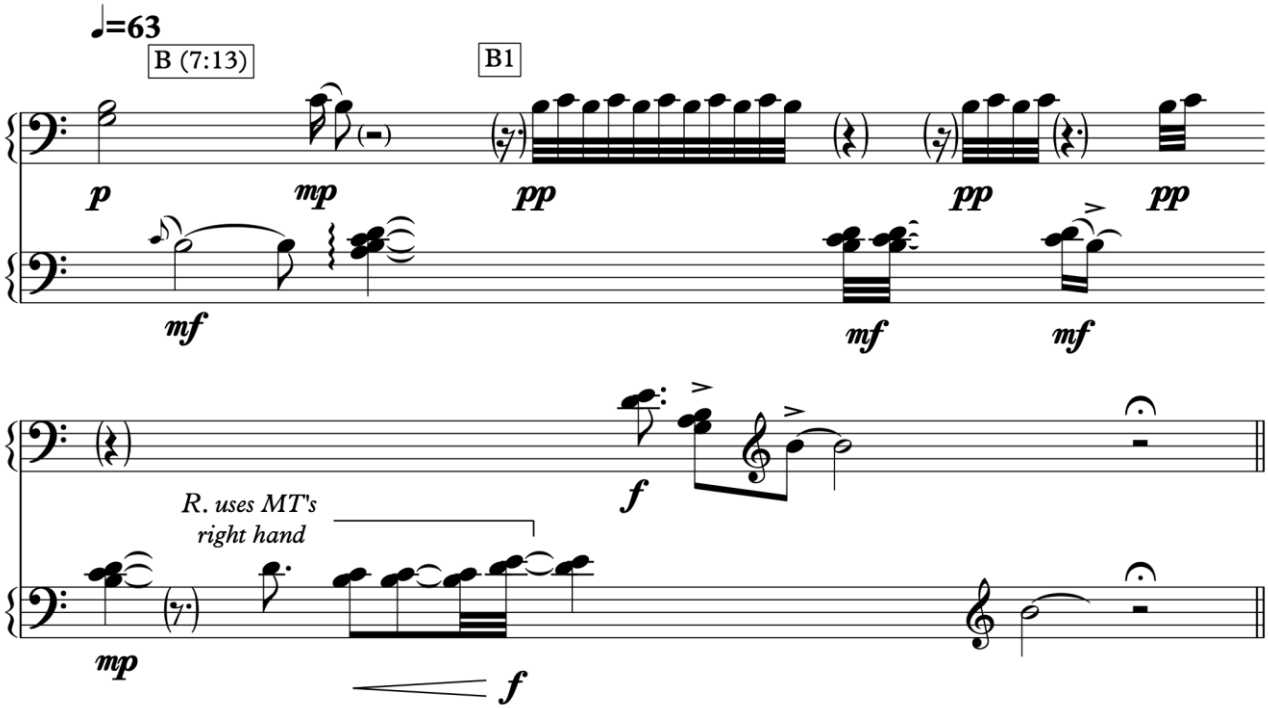


Figure 7: Section B of transcription (17th February 2017)

In section B1 (Figure 7), R. repeatedly interrupts the therapist's trill: each time the therapist resumes the trill R. allows him to play for about half the time. The third time, R. grabs his hand to play

some notes in the same position. When she releases the therapist's hand, he plays three figures, ending on a single note, which is repeated by R. shortly thereafter. The written dynamics fail to convey the increased tension in R.'s facial muscles in this passage: this, combined with the increasingly frequent interruptions of the therapist's music, suggests an ever-increasing anxiety, probably because this time there is no clear request. My interpretation is that the therapist is sustaining his sounds, not leaving an open question with a final note which can be copied. It is an invitation (or provocation) to invent something new, but R. is not ready to welcome it, and she finds no way to save herself from the uncertainty of the situation. Unable to find an answer to a question not asked, and unable to find her own identity to make an original action, her fear rises until she grabs the therapist's hand to stop him playing and bring the stressful event to an end. And when the therapist ends on a single note, she knows perfectly what to do, and she copies the final B with perfect accuracy, disregarding the movements and profile (indicative of the emotional state of the therapist) that led to his playing the note in that way. Now she can relax safely, and a prolonged silence follows.

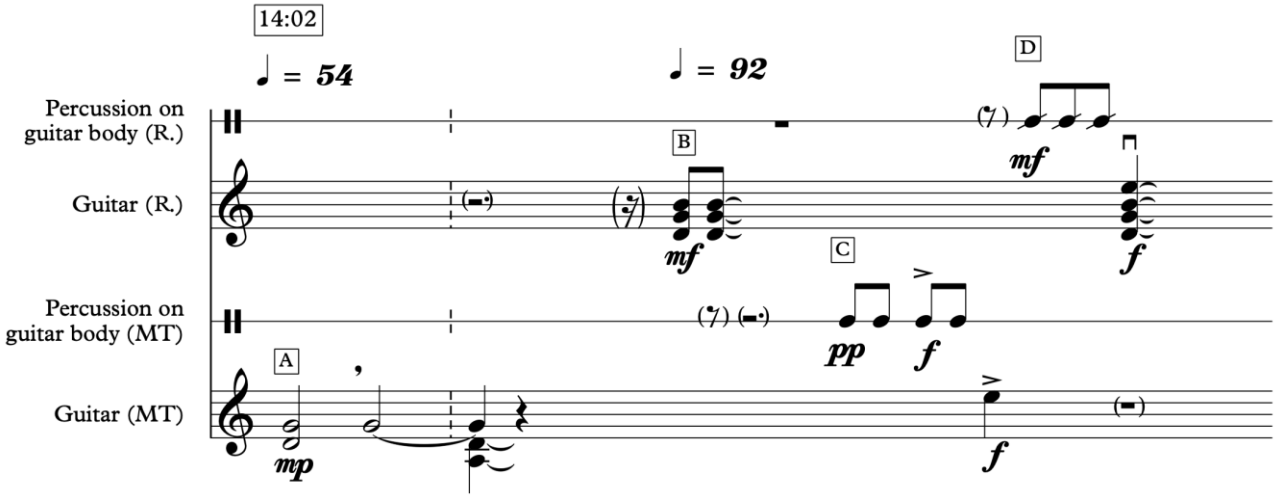


Figure 8: Sections A-D of transcription (27th October 2017)

The second excerpt dates from 27th October 2017, eight months later (see Figures 8-11; full transcription in the Appendix). It is R.'s 37th session and the 4th without the educator. The full transcription from which this excerpt is taken begins when R. moves to touch a guitar. Significantly it was the first time that R. stood up spontaneously to touch an instrument in order to suggest an activity: an example of soft behaviour, confirming the importance of the developing relationship.

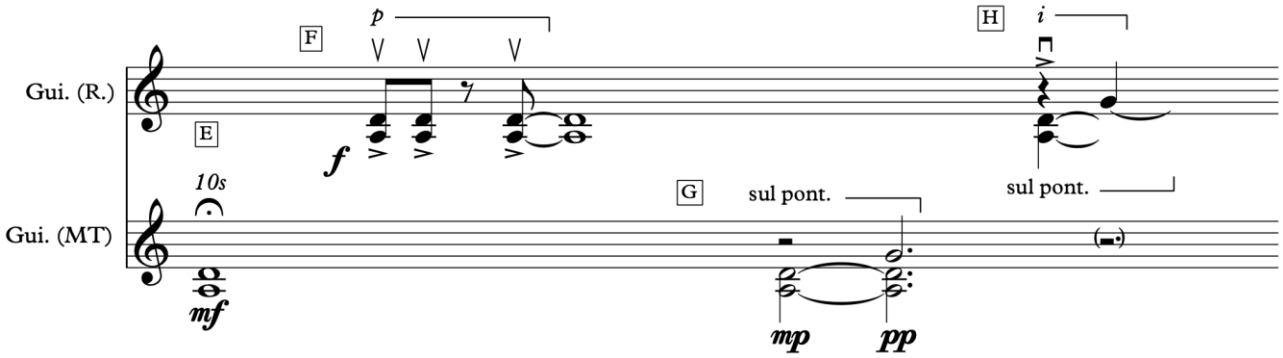


Figure 9: Sections E-H of transcription (27th October 2017)

The long improvisation that followed (about 14 minutes) was carried out whilst holding the guitar horizontally across the legs of both R. and the therapist and playing on the open strings. A rich array of forms of vitality were evident during the whole improvisation, with eye contact and effusions by R. at the end of the activity, all prompted by R. in the same way she had initiated the session. Copying still occurs, as usual louder and faster than the original (e.g., sections C-D and G-H), but there are also some variations in R.'s responses to the therapist's suggestions (sections A-B, E-F, K-L and M-O) which employ different rhythms, while sections C-D and K-L contain chords instead of the single notes of the original.

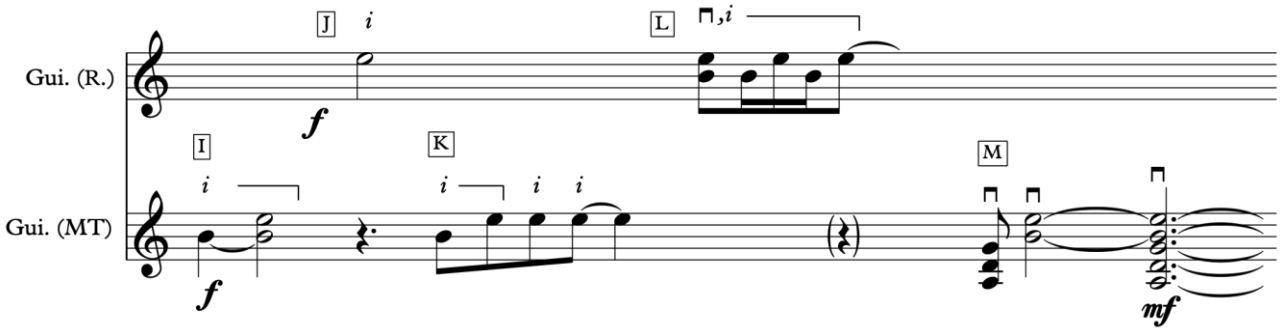


Figure 10: Sections I-M of transcription 27th October 2017 (complete transcription in Appendix)

Analysing the instances of copying, these differences could reflect a possible lack of accuracy due to R.'s unfamiliarity with the instrument. However, we should remember her accuracy in playing exactly the same keys on the piano, and even using the same guitar strings in other sections (e.g., F and H). If these variations are even partly intentional, they represent an important change in the copying process; one leading towards more individuality. Similar to the E-F exchange (previously examined, Figure 5), section O happens a few seconds after the original stimulus (M), while the therapist has already begun a continuous percussive phrase using the body of the guitar (N, P). The fact that the musical density did not increase during this dialogue indicates the lower level of anxiety than that created in the 17th February transcription.

For a summary of the forms of vitality expressed in this transcript, see Table 2 below.

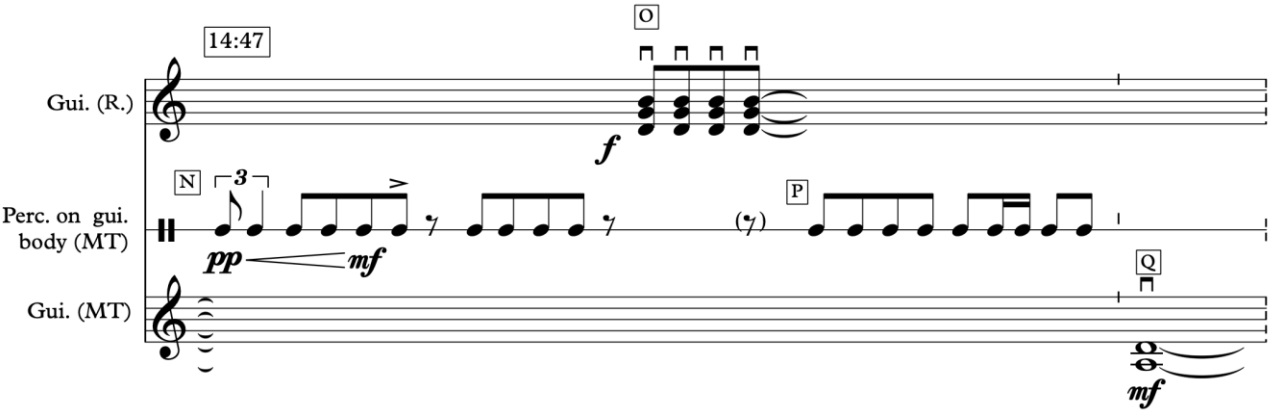


Figure 11: Sections N-Q of transcription 27th October 2017 (complete transcription in Appendix)

In Table 2, the analysis is carried out on pairs of interventions, considering in each case R.'s response to the therapist. This is arbitrary, since the response of the therapist to R. is relationally

equally significant and with this procedure the continuity of the musical discourse is lost[3]. However, it allows us to carry out a first level analysis focusing on R.'s encoding/decoding processes, in order to evaluate her responses more accurately. The 'space' and 'intention' parameters are omitted: the former is assumed to be closed within the dyad throughout (see above), the latter for requiring a more in-depth study than only analysing the transcription.

Parameter	MT	R.
Sections A-B		
Movement	Very small (1 or 2 fingers), unequal repetitions, slow	Delayed then fast, small (3 fingers), identical repetitions
Force	Constant, quite low	Constant, medium
Sections C-D		
Movement	Expanding, using fingers, fast	Expanding, using palm and then fingers, fast
Force	Quickly and widely increasing	Slightly increasing
Sections E-F		
Movement	Minimum, single	Large delay then fast, very small, repeated
Force	Medium, in resolution	Constant, high, tense
Sections G-H		
Movement	Very small, specific position, moderately slow	Very small, specific position, moderately fast (double speed)
Force	Low, decreasing	High, slightly decreasing
Sections I-J		
Movement	Very small, repeated	Minimum, single
Force	High, constant	High
Sections K-L		
Movement	Very small, repeated, regular	Very small, repeated with small variation
Force	High, constant	High, constant
General traits of the Time parameter throughout the musical dialogue (sections A-Q)		
• Based on a fairly stable pulse • Not hurried • Events arranged in a regular manner along the time frame		• Without any apparent pulse • Variably hurried • Consistent silences interrupted by quick actions

Table 2: Parameters of forms of vitality (Stern, 2010): Comparison of most of the musical dialogue transcribed for 27th October 2017 (see Appendix for full transcription)[4]

[3] On this relevant topic, see for example Trondalen (2016, pp. 86-87): "One does not observe a constant subject-object relationship [...]. It is often quite difficult to realize who is the subject and who is the object of an improvisation".

[4] This analysis also takes into account Parker's "sound organisation" model (Parker, 2012).

The musical dialogues analysed in this section are typical examples of R.'s way to encode/decode external stimuli, in the first year and a half of therapy. This copying behaviour ultimately leads the musical relationship to a (temporary or definitive) halt. In general, the ability to mirror the therapist's gestures is considered positively; it indicates the capacity to pick up on social cues (dysfunction of neural systems for mirroring is reportedly a primary cause of poor social skills in autism; Marsh & Hamilton, 2011). It is argued that mirroring is a neural system for understanding other people's actions and emotions, and could be the foundation of social cognition (Gallese, Rochat, Cossu & Sinigaglia, 2004). In one case study (Rose & Johnson, 2014) a high-functioning autistic child is systematically engaged in a series of mirroring activities: for example, the therapist plays a pattern on a xylophone and the child is "supposed to echo back the same pattern" (Rose & Johnson, 2014, p. 92). The discussion that follows holds that:

> it seems that engaging him in mirroring seemed to hold him to joint attention and provide a vehicle for increased eye contact. Perhaps other persons with autism would respond similarly if they are directed to a point of visual focus or asked to simultaneously mirror movement. (Rose & Johnson, 2014, p. 96)

With R., who shows a much higher degree of autistic disorder, the mirroring is spontaneous, but the outcome is almost the opposite: it halts a relationship developing. This difference is an indication of how, whilst most forms of vitality parameters are copied, the relational intention is not recognised.

DISCUSSION

This clinical report has illustrated a way to use Stern's theory of forms of vitality in considering musical material transcribed directly from music therapy sessions, with the aim of analysing the relational content of the musical exchanges. I have discussed how Stern's theory lends itself particularly well to musical microanalysis, precisely because of the detailed and in-depth nature with which vital forms explore the expression of vitality. Stern stated that forms of vitality are expressed at a micro analytic level, and that an ongoing dialogue is in place between this level and abstract mental processes (and their expression through movement) and discussed how all of this is linked to intersubjectivity (2010). On this basis, it was possible to analyse the therapist/client relationship that emerged through the improvisations performed during the therapy sessions, linking it to R.'s internal states.

In the case examined in this article, the results of this analysis seem to support the evaluations obtainable from other theories, and therefore the theory of forms of vitality can probably be used as a bridge to connect the purely musical part of a music therapy session with the relational aspects, in a language capable of crossing this material transversely.

This, however, is only a hypothesis to which no clinical significance can be attributed at the present time. For now, this is another tool that can aid the therapist's assessments, both during the session itself, considering the flow of forms of vitality expressed by the participants in the session in relation to the musical material produced, and in deferred form, by analysing clinical material from different phases of a therapeutic path and identifying changes and trends (as in this article). Given the amodal nature of the parameters of forms of vitality, this type of analysis probably lends itself well to

communicating the results of a musical analysis to other professionals who do not have a specific musical background, for example in a multi-disciplinary team.

Comparing this approach to other models of microanalysis that focus on the quality of the relationship between therapist and client, among those listed in Wosch and Wigram (2007), the interest in 'micro transitions' shows as a common trait. These micro transitions are the processes that have been investigated in this article through the variations in the parameters of the vital forms. For example, the models based on the Improvisation Assessment Profiles (developed by Bruscia, 1987), which employ the Autonomy profile, use a scale to assess the reciprocal role of therapist and client during improvisation. The five values of the scale (dependent, follower, partner, leader, resister) are characterised by specific vital forms, which are also apparent on a transcription of the music analysed, and can therefore be evaluated by observing the parameters of the forms of vitality expressed by the two members of the dyad. In other words, these models seem to confirm that the thread that connects the music created in clinical improvisations with the underlying relationship is made up of the Gestalt of forms of vitality.

The great generality of the theory of forms of vitality, where the five parameters have not been uniquely defined by Stern but maintain an openness that can embrace a plurality of interpretations and situations, is one of the points of strength of the theory itself; at the same time, however, great care must be taken to avoid interpretative ambiguity, which would leave too much room for the subjectivity of the moment and reduce the reliability of the analyses. For a systematic use of this approach, therefore, specific guidelines should be developed, aimed at standardising the adopted point of view (similarly to the approach used in Wosch and Wigram, 2007). In other words, high internal consistency is required.

CONCLUDING THOUGHTS

The gradual attunement that emerges from these sessions suggests that the long painful journey the therapeutic dyad undergoes to create a common ground, is ultimately a process of learning each other's language. Warnock describes a somewhat similar development in forms of vitality during a music therapy process focused on the voice with a young girl with ASD which moves from only "crying long high notes" to a far more elaborate expressivity, suggesting a higher quality of life (Warnock, 2012, pp. 89-90).

The outcome in terms of relationship and expression of emotions is hopefully common to most music therapy paths, but an important value can nonetheless be ascribed to the direct way in which the analysis of the musical content clearly indicates the nature of the therapeutic relationship. Forms of vitality, with their five parameters, as a Gestalt, are "what the familiar world seems made of" (Stern, 2010, p. 5), how we experience and express our own vitality. If we look at autism as a different way to see the world and our lives, somewhat like an emerging culture, we could argue that "instead of normalizing [people with ASD] out of their preferred cultural frame, in a quasi-colonialist assertion of power, we might seek to enhance their indigenous culture in an atmosphere of mutual respect" (Straus, 2014).

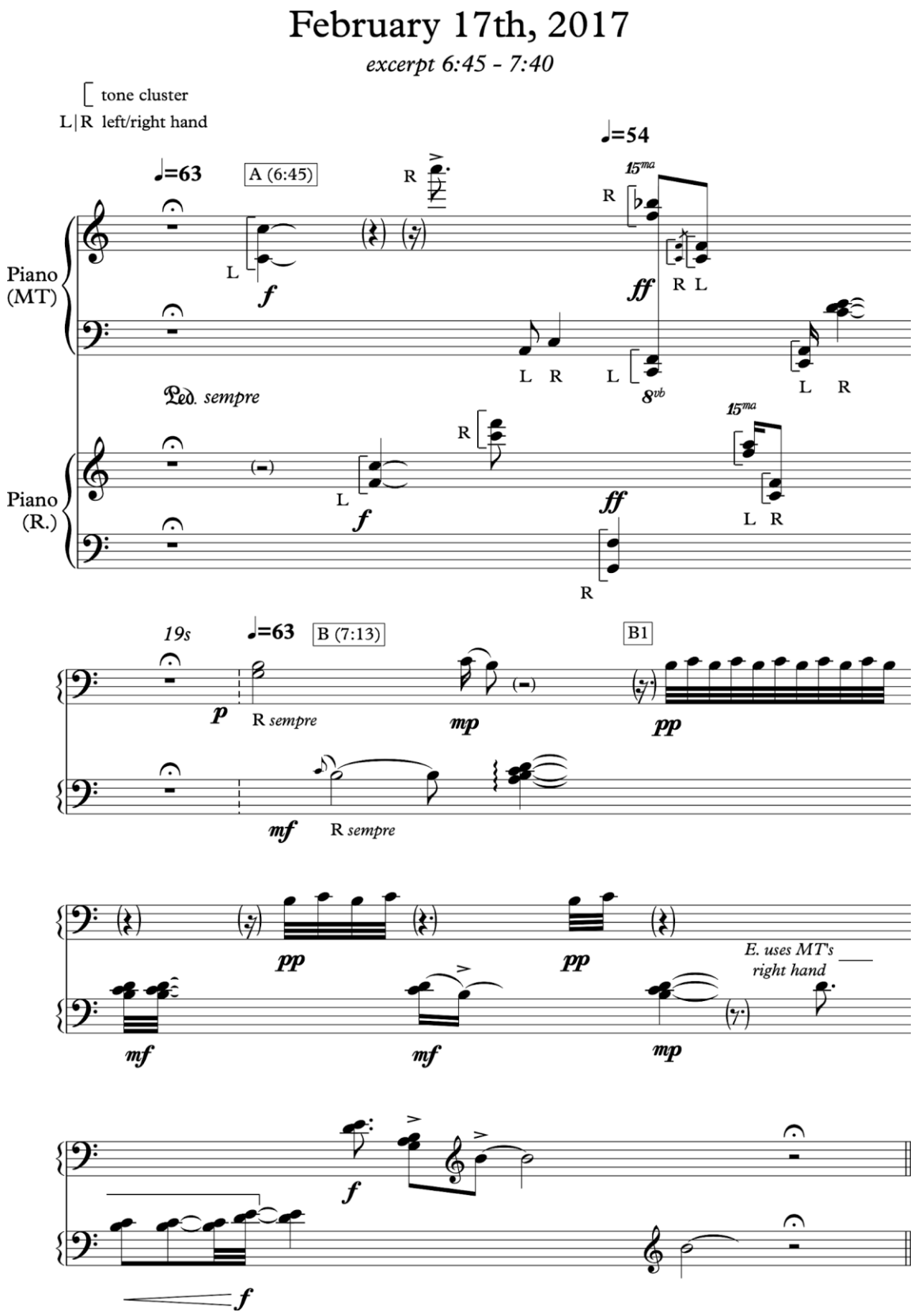
This is probably what the expression 'learning each other's language' means: in the case of R.'s path, I have demonstrated how respect for her silence (that is, her internal states that prevented her from acting) was fundamental in a certain phase, as well as learning to discern her harsh/soft behaviours, and what they could suggest with respect to the relationship currently taking place. Similarly, R. gradually managed to integrate the dimension of the setting into her day's routine, along with the therapist and his style.

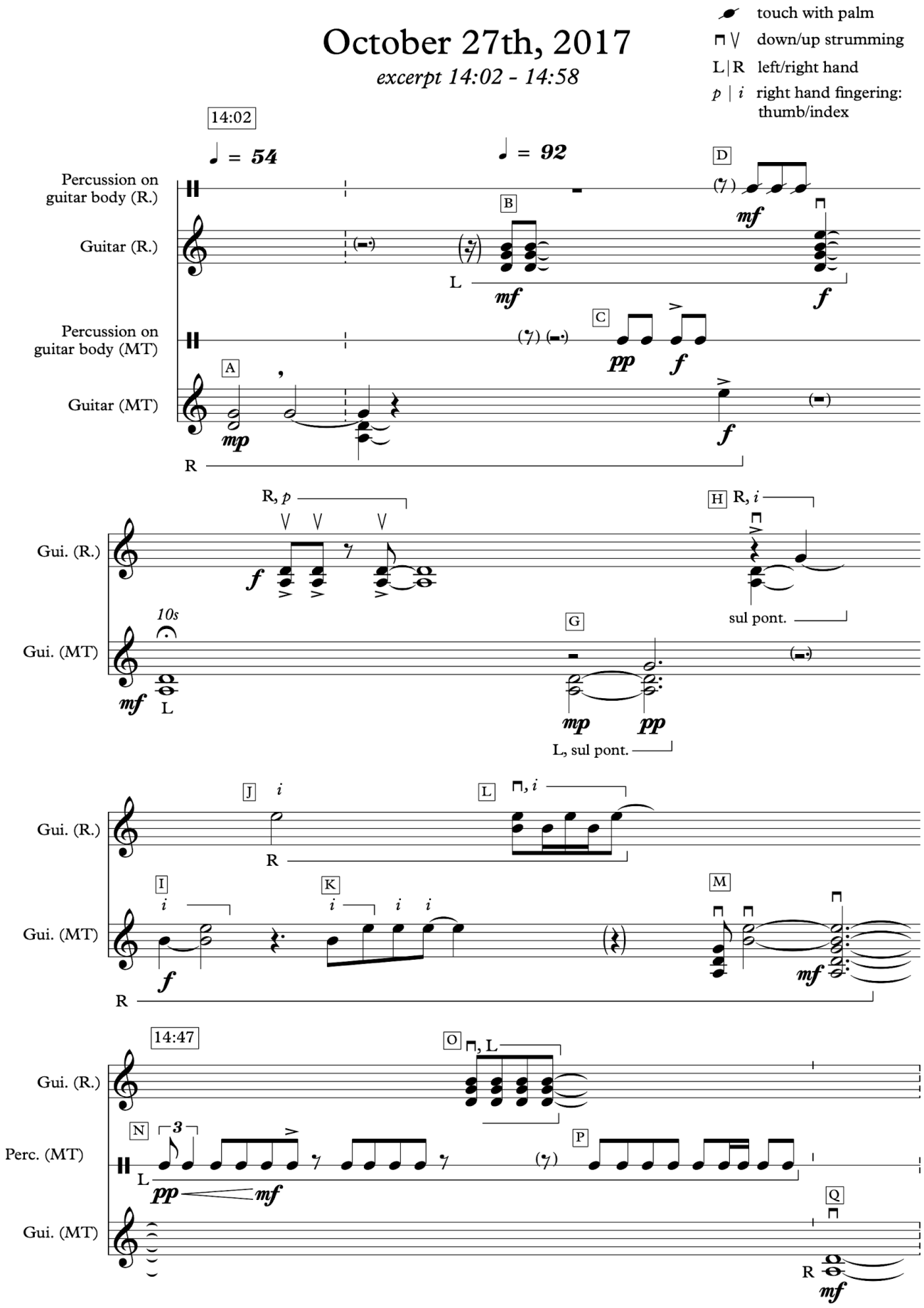
In fact, during the time that elapsed since the two transcriptions, much more interplay between the two poles of the dyad has developed and the dialogue between the participants is much more pronounced. In the latest sessions, sometimes R. allows the therapist to play some simple chord sequences alone, while intervening from time to time with her typical harsh/soft behaviours. R. and the therapist are slowly negotiating a way to be together while still being themselves, through music, "in an atmosphere of mutual respect" (Straus, 2014).

ACKNOWLEDGEMENTS

My deepest thanks to Deborah Parker for the priceless and most interesting discussions on the matter and for reviewing drafts for this article, to Henry Brown for linguistic corrections, and to the *Approaches* team for the dedicated review work. And to R., for bearing with me long enough to build something valuable together.

APPENDIX: COMPLETE TRANSCRIPTIONS




October 27th, 2017
excerpt 14:02 - 14:58
touch with palm
down/up strumming
L | R left/right hand
p | i right hand fingering: thumb/index
14:02
♩ = 54
♩ = 92
Percussion on guitar body (R.)
Guitar (R.)
Percussion on guitar body (MT)
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A
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10s
G
sul pont.
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J
L
I
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M
14:47
O
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Ελληνική περίληψη | Greek abstract

Μορφές ζωτικότητας και μικροανάλυση στη μουσικοθεραπεία με αυτιστικούς ενήλικες: Μια κλινική αναφορά

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ΠΕΡΙΛΗΨΗ

Αυτό το άρθρο εξετάζει ως κλινική αναφορά τα δύο χρόνια μιας συνεχιζόμενης μουσικοθεραπευτικής πορείας με μια νεαρή γυναίκα με αυτισμό. Οι διαφορετικές φάσεις της μουσικοθεραπευτικής διαδικασίας διερευνώνται από μια σχεσιακή προοπτική, εξηγώντας τις θεραπευτικές επιλογές του θεραπευτή. Το σχεσιακό περιεχόμενο των συνεδριών συζητείται χρησιμοποιώντας τη θεωρία των «μορφών ζωτικότητας» [forms of vitality] όπως αυτή αναπτύχθηκε από τον Daniel N. Stern, η οποία εφαρμόζεται σε μερικές λεπτομερείς μεταγραφές μουσικών αποσπασμάτων από τις συνεδρίες. Η κλινική αναφορά εφαρμόζει τη θεωρία των «μορφών ζωτικότητας» ως χρήσιμου εργαλείου για την ανάλυση των σχεσιακών διεργασιών κατά τη διάρκεια των θεραπευτικών συνεδριών, ενώ η μικροανάλυση των μουσικών στοιχείων μπορεί να συμπληρώσει και να καταγράψει αυτή την προσέγγιση, για την υποστήριξη θεραπευτικών αποφάσεων.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

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