

[Home](#) / [Archives](#) / [Vol. 4 No. 2 \(2004\)](#) / [From Signs to Symbols, from Symbols to Words](#) / [HTML Fulltext](#)

From Signs to Symbols, from Symbols to Words

About the Relationship between Music and Language, Music Therapy and Psychotherapy

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Abstract

In this article the relationship between music and language is first considered theoretically. Here the ideas and concepts are mainly derived from psychoanalytical theory as well as from its reformulations. A theory on the (early) forms of thinking is presented in which the author grounds the different types of meaning included both in music and language - without forgetting the unique features of them. Upon this, the differences and similarities between music therapy and psychotherapy are considered. It is suggested that instead of many unique characteristics of the therapies, the differences are not necessarily fundamental, and further, both of them have some advantages and shortcomings that can be associated with language - some way or another. After the theory part, the role of free improvisation in the music psychotherapy is considered. The author describes the process "from signs to symbols, from symbols to words" where improvisation in music psychotherapy process can play an important role. Here the role of improvisation analysis is emphasized. A specific "graphic notation" method, developed at the University of Jyväskylä, Finland, is presented. Through an example, based on the utilization of this method, the author illustrates what kind of meanings it is possible to "extract" by aid of it. Some suggestions for the clinical interpretations are also made.

Introduction

Musical interaction and other forms of communication between the mother and infant share similar features. Albeit mother may use words when communicating with her baby, the early communication is more based on the recognition of qualities like rhythm, timbre, pitch and dynamics of speech than on the meaning of words. These ideas, first mainly theoretical, have been later supported with empirical findings as well.

In music therapy, improvisation with its many faces is a method often applied in order to establish a relationship between therapist and client, and to provide a means for non-verbal communication and self-expression (Wigram, Pedersen, & Bonde, 2002). In addition to being non-verbal, improvisation has been characterized as a pre-verbal form of communication as well: the elements that shape the improvisation and give meaning for it are just the same qualities (rhythm, timbre, pitch, etc.) that make mother's speech meaningful for the infant. These qualities are not symbolic in the same precise way that the words are. However, many music therapists believe, that they can convey, or represent inner experiences and emotions - yet unconscious - beyond all the psychic conflicts and traumas.

From this point of view it is interesting to take a closer look at the theories explaining meaning formation in the early stages of development - especially if it is true that language and music, both being good examples of highly developed human skills, have their roots there, and, furthermore, have something in common.

The Early Forms of Thinking

I am still fascinated of the ideas of psychoanalyst Eva Basch-Kahre (1985) who introduced three new concepts, chaotic thinking, emotional sensorimotor thinking and operational thinking for explaining the early forms of thinking. She came to develop them because she was not happy with the traditional psychoanalytic division of primary and secondary process thinking. Chaotic thinking is typical thinking of a newborn child when she encounters the overwhelming inner and external stimuli. Emotional sensorimotor thinking is typical thinking in early stages of life with focal factors like

sensual impressions, motor and spatial experiences, and strong emotions. Operational thinking is tangible and logical with no room for emotions, metaphors, or symbols. According to Basch-Kahre, secondary process thinking is realized through the interaction of these three thinking modes. (Erkkilä, 1997.)

In this context I will first consider more closely the emotional sensorimotor thinking. I will come back to the two other types of thinking later in this article. The way that Basch-Kahre describes emotional sensorimotor thinking is closely related to the definition of vitality affects by Daniel Stern (1985). During the last few years various authors have applied the concept of vitality affects to music therapy. We know that vitality affects are not categorical emotions but amodal (multisensory) experiences like surging, fading away, fleeting, explosive, crescendo, diminuendo, bursting, etc. - the experiences through which music are often described. Through vitality affects it is possible also to connect music with universal, anthropological types of experiences and thus illustrate its non- and pre-verbal (extra-musical) meanings. It is interesting here that when Rolsvjord (2004) describes Kristeva's definition of the bodily and dynamic aspects of semiotics, Rolsvjord states that from this point of view, semiotics can be compared to Daniel Stern's concept of vitality affects. So, we have now three theoretical concepts - emotional sensorimotor thinking, vitality affects, and semiotics - that all shed light on the basic experiences of a human being.

If these concepts are useful in describing the essence of musical meaning, do they have anything to do with language? I will continue this discussion by attempting to find some answers to this question.

Music Therapy and Psychotherapy - Differences and Similarities

Some music therapists tend to see music therapy different from psychotherapy, mostly based on the distinction between words and music. In other words, the worlds of music and language are two such totally different worlds that, whilst sharing common values and objectives, music therapy and psychotherapy form two fundamentally different approaches (Howat, 1992). Rolsvjord (2004) points out, too, that quite often we can see that music is described in opposition to the verbal language - though she is not advocating this view herself. Howat (1992) emphasizes the uniqueness of music when it directly expresses the archetypal, the imaginary, and the unconscious. He refers to Helen Bonny, who has stated that music is the language of immediacy, and thus the perfect medium for improvisation, capable of being completely free and open-ended, and yet highly organized and structured. These are the grounds for the uniqueness of music therapy, as well as something that spoken language is lacking.

But is verbal psychotherapy in essence different from music therapy after all? When reading what psychoanalysts have written about the meaning of language and words in a therapeutic context, one can find amazing similarities to the texts by music therapists when they are describing the meaning of music. Psychoanalyst De Alvarez De Toledo (1996) states that

"paranoid anxieties, as well as the defenses against them, are manifested in the analyst's sensations and emotions, which express and correspond to the unconscious fantasies of the analysand. This emotional language may or may not be justified in terms of content." (p. 292)

Elsewhere in the same article she writes that

"when speaking and words are interpreted the act must be interpreted first and not the content. what is interpreted is not what he says in words, but what he is doing when he speaks and with the words" (p. 301)

This rather resembles the improvisational setting in music therapy, where improvisation can be described as an act between client and music therapist consisting of expression which is kind of emotional language in which emotional sensorimotor thinking or vitality affects or semiotics are the basic constructs of meaning.

Maybe it is so that both music and speech originate from the same basic experience in early stages of development, during which voices as such are attractive and fascinating. Maybe it is the primitive voice identity between the subject and object (e.g. infant-mother), between the internal and external worlds - those first highly important experiences for later life - which maintains our sensitivity towards both auditory forms of communication for the rest of our lives (De Alvarez De Toledo, 1996). It may well be that in a way music is more primitive as compared to spoken language, and is thus capable storing its communicativeness even then when one's cognitive capacity weakens dramatically - due to a neurodegenerative illness, for instance.

In order to further investigate the origin of, and relationship between, music and language, it is interesting what has been written about signs and symbols in the context of language development. After Langer (1942) Man, unlike all other animals, uses signs not only to indicate things, but also to represent them. The signal-signs are thus transformed into symbols. Man's wishes, sensations, emotions and fantasies are thus represented by signs, which then assume the character of symbols. Words are seen as symbols that represent the absent, and thus make possible communication with other humans in a relevant and effective way.

The world of words - language - constitutes a multilayered, systematic and highly categorized network of symbols by which precise communication becomes possible. Music, however is not symbolic in the same way. In other words, music seems to be too abstract to be able to denote exact sign-symbol relations. Thus, the less structured and planned music is,

the more distant it is from symbolic. Rolsvjord (2004) even suggests that

"...pre-composed music is often more symbolic than improvised music due to the emphasis of the performance in improvisations. In music therapy, improvisations without structuring musical or verbal givens will perhaps be more semiotic than improvisations structured by such givens."

Why, then, do we then have such a tradition, especially within analytic music therapy (Bergstrøm-Nielsen, 1993), where free improvising is emphasized? Why are some music therapists so keen on the expression which seems even to avoid traditional sign-symbol relations? In order to answer this question it might be useful first to consider some of the shortcomings that highly symbolic expression (like spoken language) may sometimes include.

Some Problems of Language in Therapy Context

There are many psychiatric problems where one's ability to express oneself verbally is limited or distorted. Border-line patients, for instance, are not able to normally use nor understand symbols. Under the pressure they tend to split the symbols as well as the emotional sensorimotor configurations, into meaningless fragments; and because the symbols are out of their contexts they tend to be used in an aggressive and destructive way (Basch-Kahre, 1985). Elsewhere, De Backer (2004) has described music therapy with psychotic and severely depressive patients. When these clients are deep in the regressive state they cannot manipulate symbols, nor express their inner world symbolically. When this is the case, the work done by a music therapist is based more on musical holding which is sort of preparing work for the later protosymbolic phase, which is not yet achievable.

What connects music and language undoubtedly are the vitality affects (or semiotic, or emotional sensorimotor configurations) that in normal situations are the property of both domains. However, therapists have noticed that when working with depressive patients, their language tends to lack vitality affects, or semiotics, which can be heard as monotonic (≈poor) language (Rolsvjord, 2004). Another example on the importance of the vitality affects can be seen when assessing the condition and health of a newborn baby. The first sound that is received is the cry the infant makes at birth. It is the pitch, tone and dynamic strength of the cry from which the conclusion of health and physical strength is derived (Loewy, 2004). When these hidden contents of language are so important, from the point of view of meaningful communication, it is obvious that when they are lacking the therapist has serious difficulty in tracing the meaning in speech.

Speaking and words can sometimes act as defenses against the unknown as well. In order to avoid the anxiety which results from facing the unknown, Man creates an illusion of being able to control the world through the words that are more an image of his internal than of external reality. This way we believe that we know ourselves and others to the extent that we know our thoughts and those of others - as the conclusion of this we believe that we control our own person, others, and the world. (De Alvarez De Toledo, 1996.)

For therapists, who are well educated and aware of the big number of symbols by which the human mind has been described in psychology and psychotherapy, it may be tempting to resort to this knowledge and to make interpretations and explanations in the (anxious) situation. This way, the expertise which is based on the conceptual control of a special field - like psychotherapy - can lead to the unconscious use of power as well. We, as music therapists, are of course not free of this because a great deal of our professional activities are based on spoken or written language.

In the light of this section, the fact that verbal psychotherapists tend to work primarily with patients who still have the protosymbolic capacity left, is not surprising. Maybe the question is not only about the order of precedence when there appears to be a division between verbal psychotherapists and music therapists with regard to the severity of problems of the patients they treat. Music therapists simply treat more sick patients because there is an assumption that when speech is not available for some reason or another, the communication and therapeutic interventions based on the music are still possible. But do we have any more grounds for this assumption?

Advantages of Music in Music Psychotherapy

The patients who are not capable of experiencing musical meaning symbolically - for instance in the case of border-line patients who are fixated in the operational thinking (see the definition by Basch-Kahre above) and unable to manipulate symbols - music may be more like a means to carry out their chaotic thinking. This is the case especially with free improvisation. In the context of such chaotic expression, consisting of meaningless fragments in the form of irrelevant sounds and tones, it would be a waste of time to try to gain comprehension for the improvisation that results. The only role the therapist can take in this situation is to act as an object, in a way to imitate early interaction between mother and infant, and thus create a holding condition for the client. Here the therapist is the object of projection by the client, and thus under a continuous attack of chaotic fragments (meaningless music). However, the music, the improvisation, acts as an object as well which makes the situation somewhat more bearable for the therapist (see figure 1). For more about improvisation as an object and as a target of projection, see Bruscia (1998).

Figure 1. Improvisation as a holding environment in the pre-symbolic state of the client (Erkkilä, 1995)

Although there is no obvious meaning when being under the influence of the chaotic musical expression by the client, it is possible through **projection**, to gradually **achieve the condition where the chaotic fragments start to condense**. As a result of this, the first primitive meanings appear in the expression of the client. It is a phase when the first signs of meaningful communication emerge, or when the therapist is able to recognize **sensations and emotions in the form of counter-transference reactions**, or **when the music becomes more communicative**, as **based on recognizable musical forms with emotionally loaded content**. We might also name these kinds of musical/sensual/affective patterns as **emotional sensorimotor configurations**.

Bruscia (1998) divides music psychotherapy into **four levels**, in **terms of musical experience versus verbal experience**. The four levels are **music as psychotherapy**, **music-centered psychotherapy**, **music in psychotherapy** and **verbal psychotherapy with music**. In the situation described in figure 1, only music as therapy is possible. In the situation where the first signs of meanings emerge in the form of emotional sensorimotor configurations it becomes possible to shift into the level of music-centered psychotherapy. In this light the **advantage of improvisational music psychotherapy is that it does not necessarily presuppose the symbolic ability of the client, but seems to be able to assist her/him to reach that ability through the specific holding described above**.

But what should be thought about the claim, often stated in the field of analytic music therapy as well, that it is **not sufficient to deal with the psychic experiences in therapeutic context non-verbally only**? For instance, John (1992) states very clearly that when analyzing a music therapy product (≈improvisation), the **verbal reporting is an essential part of the process because otherwise the experience stays unconscious without ever becoming conscious**. He sees the **music as a bridge between the unconscious and the conscious**, with the presupposition that **thoughts (words) are needed before the conscious level can be really achieved**. On the other hand, there are **opposite views as well**, and surprisingly, also in the field of verbal psychotherapy. According to Basch-Kahre (1985) there are **many patients who do not need analyst's verbalization but they do it themselves by aid of the emotional sensorimotor configurations, little by little**.

Personally, I feel **inclined to adopt something from both views**. **If it is possible and useful to complete or enrich the music based process with a verbal report, or to make something which is abstract more concrete by using words, why not do it?** However, there are clients with whom it is never possible to base the interaction on words in order to gain any additional benefit. This may be the case with the therapies of children, for instance. As a **conclusion**, **I see that music psychotherapy can be seen in some cases as a process preparing the client for the subsequent, symbolic stage. If appropriate and possible, and when the symbolic stage has been achieved, the therapy can become more verbal-like, resembling Bruscia's definition of music in verbal psychotherapy**. In figure 2, I attempt to illustrate the idea of the music psychotherapy process where improvisation is employed.

Figure 2. A description of the music psychotherapy process as based on the improvisational approach (Erkkilä, 1995)



In figure 2, primary process thinking (in the middle of the circle) consists of the three types of thinking according to Basch-Kahre (1985), which are described as phases I, IV and V. Primary process thinking is possible only when all three components of it are involved. Through the phase of projection (the meaningless music/chaotic fragments created by the client), the music therapist and the music together form a holding condition. Thus it becomes possible for the client, at a certain point during the course of therapy, to achieve a more expressive level (IV). In order to gain any inner meaning, the operational thinking must be involved (V). In principle the phases I-V can be passed through without ever employing the last phase (VI), which is the level for verbal (thought) insights and interpretations.

Free Improvisation - A Non-symbolic Form of Expression?

There are **good reasons to state that improvisation, especially free improvisation, is maybe the least symbolic of all the methods employed in music therapy**, as Rolsvjord (2004) pertinently commented. However, as we have seen, **free improvisation** is sometimes an appropriate approach. Though it is **based mostly on meanings, earlier described as semiotic, emotional, sensorimotor, or as vitality affects**, it is a **good tool, especially when working with patients not capable of working with symbols**. In addition, the **pre-composed music**, which indeed is filled with cultural and stylistic codes, can sometimes make patients produce only conventional symbols, possibly images originating from movies, or feelings derived straight from the mood (major-minor) of the music with no connection to one's own inner state.

Anyway, during the **history of professional music therapy**, music therapists have made **attempts to represent improvisations in symbolic form**. Because improvisation is "music created within moments of time, and in these moments, musical variations are generated from a repertoire of possibilities" (Nardone, 1997), it has been shown to be important to turn the **improvisation into visual (spatial) or literal form so that the fleeting moments can be captured and solidified, and thus make them analyzable**. In this work, the **traditional notation technique** has been utilized (Aldridge, 1998). In addition, **special graphic notation methods** have been developed, particularly for music therapy (Bergstrøm-Nielsen, 1993). Maybe the **best known improvisation analysis method in music therapy is the IAP by Bruscia** (1987). His

method is based on **conceptual, scale-based scoring**.

Bergström-Nielsen (1993) **grounds the usage of graphic notation by stating that aural scores are simpler than standard notes and staves**, and have more of an iconic character and, thus, they can easily be understood. When grounding his own graphical method, he brings out the **importance of turning temporal aspects of music into spatial aspects so that the musical whole can be comprehended**. He also points out that in this way it is **possible to provide some insight into the therapeutic process, and assist the therapist in clinical decision-making**.

It can clearly be seen that **music therapists struggle to trace the meaning in improvisations**, and to **move on from the non-symbolic level to the symbolic level whenever it is possible**. Sometimes the meaning is so hidden that it is impossible to discover it in the clinical context. For this reason, **music therapists listen to the recordings of clinical improvisations afterward**, turn to supervision as well as develop and utilize various improvisation **analysis** techniques - just for gaining insight, or in other words, for gaining comprehension in the form of images, thoughts and words - that all are symbols. **Thus, though a free improvisation may be non-symbolic in the first place, there are means to make it symbolic once the phase of chaotic thinking has been passed**. In the **next section I will present a specific method**, developed at the University of Jyväskylä, in the department of music, for **depicting clinical improvisations graphically**. I will also demonstrate the clinical application of the method through a short case study.

From Signs to Symbols, From Symbols to Words - A Specific Graphic Notation System as an Aid of Improvisation Analysis

The Improvisation

The **improvisation to be analyzed** is taken from the improvisational process of **music therapy students**. The process is part of the students' training, which aims to both deepen their self-experience on clinical improvisation and get familiar with the different possibilities of improvisation analysis. The improvisation in question is created by two students. The **improvisation was created without any givens, instruction or predestined roles**. This way, the **starting point was up to them and as free as possible**. Due to the specific requirements of the analysis method, the students could not choose the instruments - **two equal midi-pianos** - by themselves.

[Listen](#) to the improvisation (midi.file, 12kB)

After finishing the improvisation, which was recorded on a PC's hard disk, the **students were asked to listen to it again as playback and to tell their images**, which were also recorded on the hard disk. The students did the imagery trips separately without hearing each others' images until they both had finished the session.

The Analysis Method

In the analysis of the improvisation a specific method called the **Music Therapy Toolbox** (Eerola & Toiviainen, 2004) was utilized. The method is **based on the MIDI Toolbox** (by the same authors), which was originally created for the computational music analysis. The development of the Music Therapy Toolbox (MTTB) is part of a research project being carried out at the University of Jyväskylä, the aim of which is to develop improvisation analysis methods for the needs of clinical music therapy. Thus, the developmental work of functions and algorithms for Music Therapy Toolbox is based on the feedback received from clinicians and music therapy researchers involved in the project.

At the moment, **only MIDI-files can be analyzed**. Basically, the music created by any instrument with MIDI can be analyzed with this method. The result of the analysis is an exact graphic notation of certain musical features of the improvisation. With the current version of the MTTB it is possible to extract musical features like density, velocity, duration of notes, pulse clarity, tonality and pitch, and to show them as individual trend lines for both improvisers. Because it is not possible to go into too much depth here, I will illustrate only a **few of these features**, and their clinical relevance, as associated with the main theme of this article.

Musical Density in Free Improvisation

In the figure 3, the trend lines of musical density are depicted so that the red line represents improviser 1, the blue line improviser 2. The numbers below the trend lines indicate the duration of the improvisation in seconds. The density is simply the average number of notes played in a given time window. We can see that there is a clear increase of density starting approximately in 140 seconds, and lasting almost the rest of the improvisation.

Figure 3. Musical density depicted as a MTTB graph



The **concept of density in MTTB** can be compared with the concepts of activity and arousal that are well known concepts

in (music) psychology. After McMullen (McMullen, 1996), activation has often been explained as an increased state of arousal, and activation is frequently used even as a synonym for arousal. McMullen also refers to the work of Osgood, Suci and Tannenbaum, who have stated that when depicting connotative meaning, one of the key factors is the activity dimension.

Increased density in improvisation seems to consist of the contribution of several musical factors, including increase in volume, acceleration of tempo, shortened note durations, and increased number of notes in a given time window. When this kind of overall increase - arousal - in musical expression occurs it is a sign of increased emotional and physiological intensity as well (Husain, Thompson, & Schellenberg, 2002).

If the theory suggested above has any clinical relevance, music therapists should be able to utilize musical density in many ways. Because of the importance of arousal and activity in music, and because density seems to be a close relative to them, any changes in density should have clinical relevance. We might use the changes in density in order to divide the improvisation into sections, like in figure 4.

Figure 4. Utilizing musical density in dividing improvisation into parts



There are three parts with increased density, of which the last and longest one seems to be most intensive for both of the improvisers. When comparing the imagery processes with certain parts of the improvisation it became clear that the intensity of images was higher in the part with increased musical density (from 140 s. forward).

Melody Together With Volume

When looking very carefully at the trend lines of the improvisers from 140s. onward, where the density starts to increase, one can notice that Blue's music seems to be more dense, especially during the first 20 seconds. Let's see what the melodic expression of the improvisers looks like within the same part (figure 5).

Figure 5. Piano roll representation of the part with high density. Blue = lower stave, Red = higher stave.



It seems that Blue is being very expressive. She is using both hands, and producing melodic contra-movements with the right hand dominating. In the beginning, Red also makes an attempt to produce melodic contours - influenced by Blue who set the new course of improvisation around 140s. This way it seems that Red gives up the expressive role, and is satisfied with her role as accompanist to Blue.

It is possible to confirm the assumption about Blue's stronger expression by looking at the velocity graph (Figure 6). Velocity is a MIDI-concept which can be associated with volume in musical vocabulary - with reservations. After Bruscia (1987), volume in music contributes to the emotions by indicating how much energy is directed towards the object, and how intense the emotion of the object is. Volume symbolizes power, force, strength, size and commitment. In this sense, the difference in volume between the improvisers - when Blue seems to use more volume - is in harmony with the other sources that form the basis for the interpretations.

Figure 6. Velocity graph of the part with high density



After Mélen & Wachsmann (2001), infants of only 5 months are able to perform musical discrimination on the basis of melodic contours. So, the question must be about a very important feature of music. Interestingly, in psychoanalytically orientated music therapy, only melody has been defined to be a specific expression of emotion (Bruscia, 1987). Can we then conclude that Blue's role in this particular part is more emotional and more expressive? In order to answer this it might be interesting to have a look at the images at this point of improvisation (around 140s.):

BLUE: "Oh yes!", "Freedom and action!", "No signs of anxiety!" etc. [speaks loud and with dynamic manner]

RED: "The wind it is too hard", "I don't like this", "Why doesn't it stop?" etc. [speaks softly without as much dynamics or volume]

There seem to be clear similarities between the musical and verbal roles of the improvisers. What was possible to conclude on the basis of the graphs seemed to be in harmony with the reports by the improvisers. In addition, the interpretations derived from the analysis brought out many details of the interaction between the improvisers, as well as psychic processes that would have remained at the pre-conscious level without the analysis process and the consequent interpretation: "from signs to symbols, from symbols to words".

Conclusion

The improvisation under investigation represents normal interaction, with no alarming signs of disintegration, lack of dynamics, lack of interaction, etc. The graphs reveal that there is nothing wrong with the improvisers' ability to express themselves by producing emotional, sensorimotor configurations. Thus, it is also easy to trace meanings, and to speculate with alternative interpretations on the basis of the improvisation. Though the starting-point of the improvisation was very open and free, with little room for concrete symbols, we saw how the improvisation, little by little, was filled with meanings - certain musical features with yet preconscious meaning in certain meaningful order. On the ground of this semiotic phase it became finally possible to make connections between musical events and their symbolic meanings. In this process, language had a big role, not only in the final phase of the analysis but also in the form of imagery process which were carried out verbally.

The aim of this article has been to participate in the discussion about the relationship between music and language, and as an automatic consequence of that, about the relationship between music therapy and verbal psychotherapy. Rather than seeing these two strategies as opposite, I have stressed the many connective factors between them. However, music psychotherapy has some unique contents as well. When music psychotherapy is not forced to rely on words, and when it offers an alternative but still meaningful media for communication, it enables one to work with patients for whom verbal psychotherapy would be useless.

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