First of all, I would like to thank you for the invitation to speak here at the international symposium, “Music in Music therapy: theory, clinical practice and research”. The title of my paper today is “Music, Microanalysis and Clinical Practice – Compatible or mutually exclusive?” In this paper, I would like to explore this question with you.

I am not a primarily a researcher. I trained in music education in the US from the Bachelor to the Ph.D. level and worked in the schools there for several years. After moving to Germany and training in music therapy with Gertrud Orff, I worked for 32 years as a music therapist, using the developmental approach to music therapy developed by Gertrud Orff.

**My clinical background**

The Kinderzentrum München, the first and largest center for social pediatrics in Germany, was my place of work. In this branch of medicine, the two main goals are the earliest possible diagnosis and treatment of developmental delays and disabilities and the integration and inclusion of the children and youth in their families, in kindergarten, in school and in society. Parents are included in the diagnostic and therapeutic processes. The work is interdisciplinary. All therapists, also the music therapists, need to communicate processes and outcomes of therapy. They are also involved in contributing information from observations made in the therapy situation relevant to the diagnostic process (Voigt, 2013). And, as is certainly true in all institutions, the time available for a session and the documentation of this session is limited.

I would like to begin with the description of a case example in order to give you an idea of the work and the children that we work with.

An 11-month-old boy who had been admitted to the parent-child ward. A severe cerebral motor disturbance with signs of a spastic tetraparesis and a severe general
developmental retardation had been diagnosed. The boy had a disorder in the ability to swallow that was considered to be part of the cerebral motor disturbance, which made feeding very difficult. He could not cough or sneeze. He had just begun to turn himself from his back onto his side. At this point in time, it was suspected that the child also had a visual disability. It was not possible to make a statement about his cognitive abilities. During his stay, he received physiotherapy and therapy for his motor problems in swallowing. One indication for music therapy was to test the possibilities for using music therapy in the treatment plan of this severely multiply handicapped child, to see if reactions to music and musical activities could be observed. The other indication for therapy was the development of positive parent-child interaction, which had been reduced mainly to caring for the child’s bodily needs because of the serious problems in this area. Therefore, it was important that his parents experience being to interact with him in a stimulating situation of musical play. His parents had observed three therapy sessions. In the fourth, his mother took part actively, playing and interacting with him using bells and a little German children’s song (Voigt, 2013).

We will return to this case example later. First, we want to consider microanalysis as a phenomenon. Because of my background, I would like to look at microanalysis with you as a “normal” clinician, exploring possibilities and limitations from that point of view. We will consider the case example again later.

**Microanalysis in the literature**

Before the beginning of this century, there was little mention of microanalysis in music therapy literature. Music therapists seem to have been reluctant to analyze and document clinical work systematically through the use of standardized instruments. Exceptions here are the analyzation and documentation of the music in music therapy by Nordoff & Robbins and the documentation of behavioral changes in approaches found in the US that are behaviorally oriented (Wosch & Wigram, 2007a, p. 13).

In contrast, the areas of psychotherapy, education (e.g. special education) and music psychology have used microanalysis systematically for a longer period of time. An
important example here is the analysis of mother/child interaction by Stern (Wosch & Wigram, 2007a; Wosch & Erkkilä, 2016), but also by Papousek 1996), who included the analyzation of the musical elements within early parent/child interactions in her studies. In the area of the psychology of music, Trehub carried out much analysis of the early musical development of the child and of the musical interaction between parents and child before the turn of the century. She used this information in a chapter about music in early childhood published in the Volume “Special music psychology” in the German encyclopedia of psychology (Trehub, 2005). In this chapter, one very important topic covered is music in the early care of children in which speaking and singing with infants is covered, as is the responsiveness of the children to these stimuli.

**Methods of Microanalysis**

The first question for us today is: What is microanalysis in music therapy?

Wosch & Wigram (2007a) formulated the following definition of microanalysis as a “working definition”:

> Microanalysis is a detailed method investigating microprocesses. Microprocesses are processes and changes/progressions within one session of music therapy. The amount of time can be one minute (moment) or five minutes (therapy event) of one session, one clinical improvisation (episode), or one complete session. To analyze process over time, several microanalyses can be undertaken to look at several events (p. 22).

During the last years, microanalysis in music therapy has become increasingly important for researchers and has developed further. Therapists have become aware of the necessity of systematic analyses and documentation of clinical work using standardized tools. To date, there are approximately 30 different types of microanalysis that are being used in music therapy to answer different types of questions posed in different situations with different theoretical and philosophical backgrounds. Many of the methods used in research are quite complex. They offer a means for examining complex questions over a longer period of time. Some of these methods are carried out by persons, others are software-based and others combine
both of these methods of analyzing material (Wosch & Wigram, 2007a; Wosch & Erkkilä, 2016, Trondalen & Wosch, 2016). I will mention a few of these here.

There are interpretivist methods that are characterized by its exploratory and multidimensional study of what happens in the defined amount of time of a therapy event and episode from a single therapy session such as the work done by Trondalen in which music and interpersonal dialogue are the focus of attention. They are analyzed based on a phenomenological approach (Trondalen, 2007).

There are also objectivist methods that are highly operationalized - meaning that the items to be observed are clearly defined - and that yield measureable data. Examples here are Wigram’s Event-Based Analysis of Improvisations using the improvisation Assessment Profiles as a diagnostic instrument, Wosch’s Measurement of Emotional Transitions with EQ 26.5 and the Measurement of Interaction in Music Therapy by Scholtz. (Wigram, 2007; Wosch. 2007; Scholtz, Voigt & Wosch, 2007). A recent new development in this area is Stine Lindahl Jacobsen’s Assessment of Parenting Competencies in which parent-child interaction, especially in families with difficult social backgrounds, are investigated in order to determine what helpful measures from the social system, but also from music therapy could or should be implemented (Lindahl Jacobsen & Stegemann, 2016)

Some methods mix elements of both of these types of microanalysis. Ridder has included both objectivist and interpretivist aspects in her microanalysis of selected video clips with a focus on communicative response in music therapy. Here, observations that are actually seen are recorded in one column. In another column parallel to the first, the therapist reflects on what was seen (Ridder, 2007).

Sometimes, software is used to help a person code what is seen and heard. However, there are also software based tools that analyze the musical material. An example here is Erkkilä’s (2007) Music Therapy Tool Box (MTTB). The analysis is based on data produced by MIDI files as well as raw audio data. Musical features that can be analyzed are “time, register, dynamics, tonality, dissonance, timbre and pulsation” (Wosch & Erkkilä, 2016, p. 1161). The program produces graphs which depict the improvisation and the interaction between players objectively. Erkkilä
describes this as a “tool which may help a clinician or researcher to find some more, some new, or some more detailed aspects for the interpretation” (Erkkilä, 2007, p. 147) but does not hesitate to speak of its limitations and states that human perceptions remain important for the analysis of music therapy improvisations.

This sounds very complicated and scientific and leads to our second question: Can microanalysis of the music/musical activity in music therapy and/or of the therapy process be helpful for clinical practice? Is it even usable with regard to the demands of clinical practice? If so, what purposes can it serve?

Microanalysis and clinical practice:

Wosch and Wigram (2007a) have stated several ways in which microanalysis can be helpful for clinicians. Let us consider some of these.

First of all, they stress the importance of conscious perception and critical analyzation of the process of music therapy by the therapist in order “to react appropriately to very small changes in social, musical and emotional behavior and experiences within a therapeutic context” (p. 14).

This means that the interaction between therapist and client or patient can and should be assessed. Microanalysis can be used here to answer specific questions that arise within therapy sessions and that need to be looked into outside the therapy session in a more objective and detailed way. By achieving more distance to what happens in therapy than is possible when one is actively involved in the process, therapists can also recognize problems more easily and thus make necessary changes in their own behavior in order to meet the needs of the client (Wosch & Wigram, 2007a).

Another way in which they deem microanalysis helpful for clinicians is in understanding the therapy process with clients or patients who have little or no means of reflecting or whose abilities to communicate are limited (Wosch & Wigram, 2007a). Our case example of a child with no expressive language and impaired motor skills provides an example here.
In addition, microanalysis can help us to assess strengths and weaknesses of the client and give us information about their processes of development, thus contributing to and supporting the diagnostic process carried out by the interdisciplinary team as we have seen above in the example of Wigram’s and Stindahl Jacobsen’s work (Wigram, 2007; Stindahl Jacobsen & Stegemann, 2016).

Finally, microanalysis is felt to have the potential to help provide information gleaned from measurable data, even if treatment is short. This can be important for providing the evidence necessary for showing the effectiveness of music therapy with different populations within the social and health systems (Wosch & Wigram, 2007a; Wosch & Erkkilä, 2016).

There seem to be good reasons for using microanalysis in certain situations. How can microanalysis be made compatible for use within the demanding situation of clinical practice?

There are 3 factors to be considered when making decisions about using microanalysis that I feel are important here and that are mentioned very often in Wosch & Wigram’s book, “Microanalysis in Music Therapy” (2007).

The first factor is collecting the data to be analyzed. Common forms of data collection are video and/or audio material and texts, for example from interviews (Trondalen & Wosch, 2016). This, in turn, can also influence the type of method to be used. The type of data collected should be relevant to the client group and the questions to be answered (Wosch & Wigram, 2007b). For example, data from video material can be important when examining the interaction between a child and an adult because social signals such as gaze, facial expression and other non-verbal signals can yield relevant information.

In our case example, facial expression, gaze direction and movement played an important role in the interaction between mother and child. Therefore, with this patient, microanalysis would need to use data from a video in order to really look at the interaction between mother and child.
The second factor is the method to be used. Different methods of microanalysis may be better suited for certain populations and questions. Therefore, before beginning a microanalysis, I must know what questions I want to answer and what category system is necessary in order to do this (Wosch & Wigram, 2007a, 2007b; Wigram & Erkkilä, 2016).

For our case example, it was important to look at the way mother and child interacted. How were communicative signals from one interpreted or reacted to by the other? Were cues necessary to support the mother in this very first situation of play with her child? If so, was it possible to reduce the number of cues between the beginning and the end of the clip? And was I too active?

It may also be necessary to adapt methods to fit the population and questions asked. This is possible. For example, Bruscia’s Improvisation Assessment Profiles (IAP) often serve as the basis for microanalysis. However, if chosen, these need not be used in their entirety for every analysis. Indeed, those profiles relevant to the questions to be answered can be extracted, as Wigram has described in his use of the Autonomy and Variability Profiles for assessment of communication disorders and autism (Wigram, 2007).

Scholtz modified Bruscia’s autonomy profile with respect to the classification of musical behaviors, also including non-musical behaviors and qualities of interaction. She took into account the definition of music in the approach used (music defined by the term musiké). She also used a binary terminology to describe behavior that focused on quality of interaction and the dynamics of development in children. Here, for example, certain behaviors like resistance that might be deemed negative in adults, are normal and positive when a child is a certain age and is developing his autonomy (Scholtz et al, 2007).

Because of the age and condition of the patient in our case example, I would choose this method with this category system, slightly adapted to look at the interaction between mother and child as well as my own role in this constellation.
A third factor that is very relevant to the clinician is the factor of time (Wosch & Wigram 2007a; 2007b). Here, there are different things to be taken into account. The complexity of the method used will have an effect on the time needed to perform the microanalysis. Whether or not a transcription of the music must be made, the depth of the evaluation and other such factors have an influence here. Whereas a computational microanalysis such as the Music Therapy Tool Box (MTTB) can influence the time that is necessary positively, it is yet less flexible and adaptive than evaluation done by persons (Wosch & Erkkilä, 2016). How can we deal with this?

The amount of material to be analyzed can be determined flexibly according to the questions to be answered. A microanalysis of every complete session is not necessary. As Wosch & Wigram state: “The amount of time can be one minute (moment) or five minutes (therapy event) of one session, one clinical improvisation (episode), or one complete session” (2007a, p. 22).

**Practical example of microanalysis:**

For our case example, I used the 2 Min and 40 seconds of a video clip illustrating the interaction between mother and child in a situation of musical play. I have attempted to do a mini microanalysis of this less than optimal video, using the following categories for observation:

- Direction of gaze of the child and the mother
- Vocalization of the child and the mother: using musical aspects of language, vocalizing or speaking “normally”. We know from the literature that the musical elements of language play an important part in the interaction with young children.
- Musical activity of the child and the mother: singing, playing instruments

**Results of video observations:**

When viewing the video with regard to these questions, I arrived at the following results (Table 1):
In the area of gaze, I observed that the mother had almost all of her attention to the child, except where she was dealing with the bells that had fallen off his hands. The child divided his attention between his mother and me with an emphasis on contact with his mother. However, the gaze in my direction may also have been due to the motor disability.

The vocal interaction between mother and child took place often in dialogue. The mother was being responsive because of her use of motherese in speaking to her child, praising him, encouraging him, etc. The musical elements of her speech were very evident, especially in terms of melodic contour. This corresponded to the child’s developmental level at that time.

The child’s use of vocalization only with musical elements corresponded to his developmental age at that time. He responded in kind to the expression of his mother. The predominate use of the instrument corresponded to the little musical game that the child knew. The mother used the instrument within the structure of play to get the child’s attention and to enter into a musical interaction with him. She waited for his answer before giving a new impulse.

The child always responded to his mother’s vocal or instrumental signals with eye contact and answered her musical activity with the bells by playing his own, resulting in a dialogue between the two.

The children’s song was always introduced by me, and served as a point of focus for repeating the dialogue with the bells.
Table 1: Observations of behavior in 5-minute intervals (areas shaded grey represent time periods in which the faces were not visible)

<table>
<thead>
<tr>
<th>Category</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaze</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mother to child</td>
</tr>
<tr>
<td></td>
<td>mother to therapist</td>
</tr>
<tr>
<td></td>
<td>to other (Bells fell from child's hand)</td>
</tr>
<tr>
<td></td>
<td>child to mother</td>
</tr>
<tr>
<td></td>
<td>child to therapist</td>
</tr>
<tr>
<td></td>
<td>child to other (Bells fell from child's hand)</td>
</tr>
<tr>
<td>Vocalization/verbalization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mother to child musical elements speech predominate</td>
</tr>
<tr>
<td></td>
<td>mother to child speech</td>
</tr>
<tr>
<td></td>
<td>child to mother musical elements speech predominate</td>
</tr>
<tr>
<td></td>
<td>musical activity</td>
</tr>
<tr>
<td></td>
<td>mother to child instrument</td>
</tr>
<tr>
<td></td>
<td>mother to child singing</td>
</tr>
<tr>
<td></td>
<td>child to mother instrument</td>
</tr>
<tr>
<td></td>
<td>child to mother singing</td>
</tr>
</tbody>
</table>
The interaction resulting from these behaviors enabled the mother to establish a structure that the child could understand (coherence) giving impulses that corresponded to his level of development (synchronicity) and treating his expressions as communication (reciprocity). According to Plahl, these are factors found in responsive interaction and are central in developing a (therapeutic) relationship within music therapy with children (Plahl, 2000).

Quality of interaction between mother and child:

What does this analysis tell us about the interaction between mother and child?
I used the MIMT (Scholtz et al, 2007) as the basis for my analysis. If we use Scholtz’s classification of the proportional distribution of behavior, we can look at the interaction in terms of interaction quality. However, I did make some changes in order to take into consideration the context of action and the disability of the child.

Gaze:
In the first quantification according to my analysis, we see that the mother has her gaze to the child in 71% of the observations made, the child to mother in 56%. 28% were toward me (see reference to the child’s disability above). Because the bells fell from the child’s hand at one point, both mother and child concentrated on this event, also with the direction of gaze. Although this is then marked as begin gaze to “other”, both were concerned with the same context. For this reason, I came to the following conclusions:
I have classified the mother’s behavior as partner/responsive here. We know that sensitive observation of the child’s behavior and responses are necessary in order to encounter him at the level needed and respond adequately to his needs while giving new impulses to play and interaction (Sarimski, 1993). Thus, this behavior on the part of the mother enables her to be responsive.
I have also classified the child’s behavior as a partner/responsive although we had a combination of average/seldom in this category. The reason for this was that the gaze of the child to “other” had to do with the child’s attention to the bells as his mother attempted to replace them on his hands. Both were concerned with the same topic – we could see a type of joint attention here. Also, we cannot be sure that the gaze toward me was not a result of his motor disability (Table 2).
Table 2: *Quality of interaction in the area of gaze after quantification*

<table>
<thead>
<tr>
<th>Category</th>
<th>Behavior</th>
<th>Mother</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaze</td>
<td>Toward mother/child</td>
<td>71% predominant</td>
<td>56% Average</td>
</tr>
<tr>
<td></td>
<td>Toward therapist</td>
<td>0% never</td>
<td>28% Seldom</td>
</tr>
<tr>
<td></td>
<td>Toward other:</td>
<td>29% seldom</td>
<td>16% Seldom</td>
</tr>
</tbody>
</table>

**Quality of interaction**: Partner/responsive

**Use of speech:**
In 47% of the mother’s verbalizations/vocalizations, the musical elements predominated, 53% of her verbalizations/vocalizations were „normal“ speech in which the musical elements could be perceived when also not as strongly. The child expressed himself only through vocalizations that could be classified as having predominantly musical elements. This corresponded to his level of development.

However, Table 1 shows the dialogue-type interplay between mother and child resulting from the fact that apparently each understood the signals of the other. The quality of interaction shown by mother and child was thus determined to be partner/responsive (Table 2).

Table 3: *Quality of interaction in the area of speech after quantification*

<table>
<thead>
<tr>
<th>Category</th>
<th>Behavior</th>
<th>Mother</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech</td>
<td>musical elements predominate</td>
<td>47% average</td>
<td>100% predominant</td>
</tr>
<tr>
<td></td>
<td>mother/child</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>speech predominates</td>
<td>53% average</td>
<td>0% never</td>
</tr>
<tr>
<td></td>
<td>mother/child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of Interaction:</td>
<td>Partner/responsive</td>
<td>Partner/responsive</td>
<td></td>
</tr>
</tbody>
</table>
Musical Activity:
With regard to musical activity, 76% of the mother's musical activity occurred through the instrument, 24% through singing. We have already discussed the function of the instrument in the little familiar musical game that was used.
The child's musical activity occurred only with instruments that could be played in spite of his motor disability and corresponded to his developmental age. This enabled both players to enter into dialogue with each other.
Because of the dialogue character of the musical activity, the joint attention and the adaptation that we could observe in both players in the video, I would classify the quality of interaction in both mother and child here as partner/responsive (Table 4).

Table 4: Quality of interaction in the area of musical activity after quantification

<table>
<thead>
<tr>
<th>Category</th>
<th>Behavior</th>
<th>Mother</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musical Activity</td>
<td>with instrument mother/child</td>
<td>76% predominant</td>
<td>100% predominant</td>
</tr>
<tr>
<td></td>
<td>through singing mother/child</td>
<td>24% seldom</td>
<td>0% never</td>
</tr>
<tr>
<td>Quality of interaction:</td>
<td></td>
<td>Partner/responsive</td>
<td>Partner/responsive</td>
</tr>
</tbody>
</table>

Meaning of results for clinical practice:

The indications formulated for therapy were to determine possibilities and resources of the child and to support and promote parent-child interaction. Were we on the right track to understand and support the child in his development and to understand and support the parents in interaction? What did the microanalysis enable us to see?

We could observe that the child used the abilities he had to actively participate in a musical situation of play.

His mother was definitely able to use principles of responsive interaction. She discovered these within this musical situation of play, adapting her actions and suggestions to his level of development, reading his signals and responding intuitively. The importance of play in child development and in parent child interaction is well known (Rubin, Fein & Vandenberg, 1983; Hughes, 1995; Oerter, 1999). Some
authors are of the opinion that play is as important for the adult as it is for the child (Rubin et al, 1983). The mother’s statement to the child’s father at the end of the session - „Tomorrow you will do this. It is so wonderful!“ - would seem to support this view.

In carrying out this little abbreviated microanalysis for example, I personally became much more aware of the musical elements in the mother’s vocalizations and verbalizations and how they differed to my own, showing here the ability of the mother to be responsive intuitively, adapting her own behavior to the development of her child.

We have seen that a mother, who was playing with her child for the first time, was able to discover and use her intuitive abilities to interact with her child, gaining self-assurance and (and I think this is very important) obviously enjoying this interaction.

In conclusion – is microanalysis compatible with clinical practice? I would say yes, if it serves the purpose of understanding the needs and expressions of the patients or clients, if it serves to make us aware of processes, of shortcomings in our own behaviors, if it helps us to assess our work and to support diagnostics in the clinical setting, if it delivers the measurements that contribute to evidence of the effectiveness of music therapy. **Microanalysis should not become an end in itself.**

A second question could be: Is microanalysis always necessary in this complexity within clinical work? Here, I personally would say no, it is not necessary for use with every client or in every situation.

There are elements that are used in microanalysis that can be implemented in the normal situation without carrying out a formal analysis as described above. If we learn to operationalize goals, to ask questions and observe interaction on the basis of clearly formulated questions, if we are willing to learn to step back and observe ourselves, for example by looking at a specific situation in a specific context in a video clip, to describe what we see and hear concretely and to interpret this within the context in which it happens, we can already gain much information about our client, about ourselves and about the processes taking place in therapy. This can
also help us communicate with the other members of the interdisciplinary team. The first video I ever made of my work in 1986 taught me more than any verbal reflection could have. A detailed microanalysis was not necessary to point out what I was not seeing, but a clear question was! However, we should not refuse to consider and to implement microanalysis where it is relevant.

**Microanalysis, Music and Music Therapy:**

I would like to close with thought about music and microanalysis – are they also compatible?

Several months ago, when looking through some of my old piano music from the time of my studies of music education, I ran across a Bach fugue in which the subjects, countersubjects, entries and half-entries, developments, sequences etc. were marked and labeled. I remembered then that my piano teacher had required this so that I would understand how the music had been constructed and how the different voices interacted with each other. Sometimes the treble needed to be voiced in a certain way - sometimes the bass and sometimes the passages that happened between treble and bass. By analyzing the fugue in this way, the functions of the voices and the interplay between them became clearer. Instead of just playing the notes, it was possible to interpret the music with more differentiation and expression, adjusting technique to achieve the necessary effects in the musical sounds.

It seems that analyzing the music we play or sing can serve to improve our performance and/or our perception of it and thus to enable more enjoyment. By having a better understanding of what and how we are performing and what the outcome is or can be, we can be more flexible, can try new means of interpretation because we are aware of the contents of the music and the technique necessary to interpret the music and can “play” with the music and our technique creatively.

Wheeler (2007), in her foreword to the book *Microanalysis in Music Therapy* by Wosch and Wigram, uses a similar example of breaking music down into its components and also breaking it down into small sections in practice. She states that after working with small elements, one can put them back together in the larger
musical context at what she terms a “higher level” (p. 11). She brings this into context with microanalysis in music therapy and states that by breaking down the therapy process into smaller parts, therapists begin to understand what happens in music therapy, which can, in turn, lead to improvement within the therapy process. Let us be open for microanalysis in music therapy, but let us not forget the music!

References:


