Variability and autonomy in music therapy interaction: Evidence for
diagnosis and therapeutic
intervention for children with autism and asperger Syndrome

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Each of us who learns to talk to you, each of us who manages to function at all in your society, each of us who manages to reach out and make a connection with you, is operating in alien territory, making contact with alien beings. We spend our entire lives doing this, and then you tell us that we can't relate.


A paediatrician in London recently commented that it is no longer satisfactory simply to give a child a diagnostic label. This may answer one question, but it provokes a hundred more. Children are all individual, and calling them 'autistic' or 'Asperger' does not describe them. Multidisciplinary assessment, of which music therapy provides a unique part, is a way of obtaining a more complete picture of a child. In 1982, Dr. Hugh Jolly, a famous paediatrician and director of the Child Development Centre at Charing Cross Hospital, London, said that he did not consider any assessment of a child complete without a music therapy assessment.

Formal standardised assessment tests in cognitive psychology with which I am familiar, such as the Kauffman ABC, the Leiter or the WISC, are carried out to a strict protocol. Although these tests highlight strengths and indicate IQ, they inevitably create an experience of failure in children who are presented with tasks that become successively more difficult. Nevertheless, these tests provide an important part of the picture.

Music therapy assessment can provide another part. A psychologist colleague recently told me that a significant strength in music therapy assessment was in the areas of social engagement and non-verbal communication -- precisely the areas in which children with autism and Asperger Syndrome have some of their most profound difficulties. Music therapy, however, can evaluate more than just social engagement because it looks quite specifically at musical events and musical behaviour, and makes evaluations and interpretations of both quantitative and qualitative data. The frequency and duration of musical events that take place when therapist and client are playing can be counted for a quantitative analysis. The measurement of musical material, for example, tempo changes, rigid or flexible rhythmic patterns, phrasing, changes in intensity, and general variability in style, can be analyzed and measured. At the same time, from a more qualitative and psychodynamic point of reference, the nature of the relationship, the influence of both transference and countertransference phenomena, and the importance of containing, holding, and nurturing emerge from intuitive and empathic levels of interpretation, which adds in equal amount to the assessment.
Differential Diagnosis

The Harper House Service sees over 200 children a year, and has been doing so since 1985. We have therefore built up a long history of assessing and diagnosing children with many different characteristics, and have been using a multidisciplinary approach to gain a complete picture of the child before making a clear diagnostic decision.

It is often difficult for people to agree on a precise diagnosis for autistic spectrum disorders, because autism is very rare in the general population. The 4 to 5 children in 10,000 who are affected with autism generally appear physically normal with no identifiable medical cause for their behaviour. It is still not clear what causes autism, whereas the primary causes of learning disability are frequently more apparent. Autism was first identified by Leo Kanner (1943), and included a six-point list of characteristics:

1. Extreme autistic aloneness.
2. Language abnormalities.
3. Obsessive desire for maintenance of sameness.
4. Good cognitive potential.
5. Normal physical development.
6. Highly intelligent, obsessive, and emotionally cold parents.

The last of these characteristics has long since been discarded as inapplicable, and the evidence for good cognitive potential is inconsistent across the population. Since 1943, research and clinical assessment of autism have gone through a number of changes, and a variety of diagnostic indicators has been proposed for autistic spectrum disorders, as well as explanations regarding cognitive difficulties, theory of mind, and methods of assessment (Baron-Cohen, 1988; Creek, 1961; Frith, 1991; Gilberg, 1989; Pennington, 1991; Rendle-Short, 1971; Rutter, 1978; Rutter & Schopler, 1987; Trevarthen 1996; Trevarthen et al., 1996; Wing, 1976). The Harper House Children's Service currently subscribes to the triad of autistic impairment described by Lorna Wing (1987), who argued that, in autistic spectrum disorders, the core impairments that are essential for diagnosis are impairments of social interaction, social communication, and social imagination. This triad of impairments is commonly accompanied by repetitive and sometimes stereotyped activities. Many are acquainted with flapping, spinning, and other physical stereotypies, but, at a complex level, this can also emerge in rigid patterns of behaviour, order, sequences, routines and complex rituals, and repetitive questioning. Variable features, not essential for diagnosis can include abnormal sensory responses, motor problems, inappropriate emotional reactions, and special skills.

The autistic spectrum can range from more intellectually disabled with low IQ up to high-
functioning or bright people. Asperger Syndrome also comes into the associated area of high-functioning autism. At the same time, I have observed, over many years of contact with a great variety of children and adults, another spectrum, that of the mildness or severity of the symptomatology. Figure 1 illustrates the potential balance between severity of symptoms and severity of handicap. A common perception of the pathology is the children who fall into the D quadrant -- intelligent but with severely autistic behaviour patterns, and often diagnosed as classically autistic. Children in the A and C quadrants are more likely perceived as mildly or severely developmentally disabled. Certainly, one cannot expect perfect positive or negative correlations at a diagnostic level between the vertical or horizontal axes; clusters of symptoms and variability in the degree of intellectual disability can throw up a myriad of subtle differences. The case example in the chapter is a child who falls into one of the most confusing areas, in the B quadrant. Nevertheless, although the symptoms of children with Asperger Syndrome appear mild, they are nevertheless debilitating and pervasive. Early history is critical in these cases, and evidence of their difficulties can be traced back to early infancy.

Cf. Figure 1

During the first appointment at Harper House, a detailed history is taken of the child's early development. The first 3 years are particularly significant, as it is generally accepted that evidence of autistic disability is clearly present in various forms of behaviour response during those first 3 years, unless the child falls into a rather unusual category of late onset autism. A complete description of the current arguments and discussions regarding the causation of autism is beyond the scope of this paper. Harper House, however, generally subscribes to the most recent research supporting the theory that autism is the consequence of an underlying defect that affects normal brain function and, in so doing, has compromised normal development. Although there is no scientific evidence that psychological or psychosocial stressors can lead to autism, there is evidence that autism has an organic basis. Most autistic children have been found to have EEG abnormalities, and there is also evidence that, in a smaller proportion, there are structural brain abnormalities, abnormal auditory brain stem responses, neurochemical abnormalities, and frequent evidence of genetic factors associated with autism (Locke et al., 1994; Trevarthen et al., 1996; Tsai and Ghaziuddin, 1992).

Asperger Syndrome

Children with Asperger Syndrome and children with autism share deficits in social and emotional competence and in the use and understanding of the nonverbal communication that
regulates social interaction. There are, however, distinct differences between these two pathologies. While there are severe impairments in reciprocal interaction, there is a less pervasive lack of responsiveness than in autism. Typically, there is more initiation of social contact, greater 'cognitive' knowledge of emotions and intentions, and a greater concern about social rules. Nonverbal communication problems are usually evident in limited and inappropriate use and understanding of all aspects of nonverbal communication (e.g., gestures, facial expressions, use of gaze, general body language, and personal space). Children with Asperger Syndrome often differ significantly from autistic children in speech and language development, particularly in their good mastery of formal aspects of language and difficulty with pragmatic applications. One finds 'one-sided' formal and pedantic expressive language, verbosity, and over-literal comprehension. A characteristic feature of Asperger Syndrome is isolated 'hypertrophied' special interests often tending to dominate, or interfere with social interchanges and most activities (social or solitary) for long periods of time. There is frequently evidence of the imposition of routines on self or others, and a dislike of novelty or change. Finally, one commonly finds early motor problems, for example, delay in motor milestones, gross and/or fine motor problems, poor coordination skills, and poor spatial awareness.

Diagnosis often takes place later on, and many of the cases of Asperger Syndrome identified at Harper House are children who are not referred until they are over 9 or 10 years old. At home, and later at school, they are marked out as odd, socially inept, gauche, one-track minded, obsessive, not "streetwise", and are frequently the object of jokes, teasing, and bullying. Often they are not recognised as having "special educational needs" in the academic sense, because academically they are typically average or above average when compared with children of a similar age. But there is, to a greater or lesser degree, a significant lack of empathy, or ability to understand how another person may be thinking or feeling.

**Music Therapy as a Diagnostic Tool for Assessing Autistic Spectrum Disorders**

Music therapy can play a very significant role in the assessment process with children who have communication disorders, because the nonverbal nature of the medium works with preverbal communication systems. A music therapy framework allows children a potential for revealing preverbal and alternate communication systems that they have developed, which can in turn support or negate a diagnosis of autism, and point in a different direction.

Autistic children who don't understand the "messages" that parents send to them, including facial expression and babble speech, ignore them. Keen to develop a communication of some sort with their child, parents quite naturally continue with the messages, whereupon children with autism develop "cutting-out" mechanisms (avoiding eye contact, developed
stereotypies) and patterns of behaviour emerge, which is autistic children's way of establishing their own set of rules and structure on a world they find increasingly difficult, sometimes intolerable. These develop into rigid patterns of behaviour, repetitive, and perseverative activities, and autistic children do not then develop the early preverbal communication strategies and babble that are the normal precursor to verbal language. It is by returning to this early stage of communication, through the use of shared sound, offering an alternative channel of communication through the language of music, that music therapy can be successful in stimulating interest, initiative, and motivation in the autistic child for meaningful communication.

In history taking, we frequently find the absence of normal preverbal "babble", which is expressive and meaningful at this level, and is inflected and formulated in phrases. This babble is timed "turn-taking" exchanges between the parents and the baby. The intoned sounds that babies use to express needs and feelings from about 9 months on are inbuilt and inherent, not learned. In this way, a baby attracts attention, expresses emotion, and engages in social exchange. Music making in an improvised and free way, both with instruments and also with vocal sounds, is a way of revisiting this early phase of communicational exchange, using simple rules and free, unlearnt sounds. The children who are assessed in music therapy at Harper House can readily show a capacity for going into this medium, for demonstrating their desire to communicate where verbal language for one reason or another, due to either pathological or social disabilities, has not properly developed.

**Assessment can be defined for different purposes:**

- **Diagnostic assessment** -- to obtain evidence to support a diagnostic hypothesis.

- **General assessment (through music therapy)** -- to obtain information on general needs, strengths, and weaknesses.

- **Music therapy assessment** -- to obtain evidence supporting the value of music therapy as an intervention.

- **Initial period of clinical assessment in music therapy** -- to determine in the first two to three sessions a therapeutic approach relevant to the client.

- **Longterm music therapy assessment** -- to evaluate over time the effectiveness of music therapy.
Information Seeking in the Therapy Assessment

A therapy assessment session is different from a regular therapy session. In diagnostic assessment, the therapist has to take responsibility for a number of different factors:

- Exploring the child's range of responses.
- Exploring the child's lack of response looking at both the potential of the child, and his or her difficulties evaluating the child's response to the novelty of the situation.
- Testing a diagnostic hypotheses proposed for the assessment.
- Evaluating children's response in terms of their general potential.
- Evaluating the child's response in terms of his or her potential to benefit from music therapy.
- Evaluating the child's response in terms of his or her potential for responding to other forms of therapy or intervention.
- Considering the child's behaviour and response in a music therapy assessment in relation to the wider picture of the child's response to other media.

Assessing Communication Disordered Children: A Framework

Working in a child assessment and diagnostic unit requires one to find a balance between developing a therapeutic relationship and seeking out relevant information that may be important to specifically posed diagnostic questions. This session structure is quite flexible, and I do not always follow this procedure with every child. I do, however, try to work through a process with the children, where I am mixing both free, undirected, elements of the session with more structured and focused areas.

As I am frequently trying to evaluate the pathological origin of a communication disability such as autism, the equipment chosen for use in the session is quite deliberate. What I will now describe is a flexible sequence of events that occur roughly in the order defined, but are not all necessarily present in every assessment, and can vary depending on how the process develops.

Opening
I allow children to begin the session when entering the room, by waiting to see what instrument they might choose straight away, or whether they wander around looking at the instruments, or ignore them. After a short time, I frequently go to the piano and play, quite unintrusively and supportively, some gentle improvised music. I try to allow my intuition into the client's way of being to generate 'empathic improvisation', a method described by Alvin (Bruscia 1987), where therapists attempt to reflect their feeling of the client's physical and emotional state in their music, giving a musical interpretation to the client of how the therapist sees and feels them. I try not to make any demands "musically," or require any response from them at this time. This is a waiting time, a time to watch and see what they do, whether they choose to relate to me or whether they choose to ignore me. It is also a time to see what they choose to use in the room and what they ignore.

Free Improvisation

- Tonal and atonal.
- Reflective and mood responsive.

While they are exploring the instruments or, alternatively, while they are waiting to see what might happen next, I will try to match their mood musically. I reflect to them the feeling I am receiving from them, the mood they are in, and perhaps, some extent, the mood I am in at the beginning of this session.

Structured Improvisation

- Therapist on piano, client on "chosen" instrument.
- Emerging turn-taking, sharing strategies.
- Musical "questions and demands," both rhythmic and melodic.
- Matching and non-matching styles.

After the free improvisation period, I will try to focus clients more on the particular instrument they have chosen to use predominantly. I will initially work from the piano and try to initiate and develop turn-taking with the children, and then subsequently see how they respond if
I share the instrument they are using, or make a dialogue with them on a similar or complementary instrument.

Musically, I initiate "questions and demands," rhythmically and melodically. The purpose here is to begin to structure the musical dialogue we may have developed by helping children with some musical frameworks such as simple rhythms, melodies, and phrases of melodies, to see what they pick up, and how they respond. Also, it is a provocation to which they may make an alternative musical statement or response, or which they may resist. I will frequently match, mirror, or reflect their musical material, or alternately provide opposite ideas to the musical material they are producing. This is a significant part of the session as it involves a relationship building process through music which some children will accept and some will reject.

**Introduction to New Instruments**

- Wind chimes, metallophone, gong.
- Varying styles: game playing, sharing, discussing, free improvisation, repertoire.

When the attention or interest of the child begins to decay toward the structured improvisation session on the chosen instrument, I will, at this point in the session, introduce new instruments. I am quite specifically choosing the three instruments mentioned above because: (a) they are all metal; (b) they can develop a different experience for the child; and (c) they are all interesting diverse shapes and produce sustained sounds.

1. Windchimes: developing "game playing"; peering through the bars at them; tactile experiences with the instrument; intuitively use them with musical intention.

2. Metallophone: intuitive skills in knowing how to play this instrument; scale playing; alternate hand playing.

3. Gong: to share the experience of playing; to explore and assess excited and fright reactions (empathising with the fright reactions by reacting in a startled way to loud sounds they may make on the instrument).

Working through the free improvisation section, the structured improvisation section and this section with new instruments, I am at all times able to experience the personality of the child in their music making. Unconscious and hidden moods, anxieties, emotions, and resistances will emerge throughout this period of time.

**Discussing**
By this time in the session, if it is appropriate, and if I have not already initiated discussion, I will start to introduce more verbal material (depending on the verbal skills and understanding of clients), asking them questions about what they are doing, what they like, and what they would like me to do. I also introduce repertoire, if it is appropriate. Sometimes the parents mention that their children have favourite songs, television programme themes, cassette tapes etc., and I sometimes work with this material from the piano while they are playing or singing. More recently, with children with Asperger Syndrome, I have introduced a musical experience where I improvise music with different emotional expression and "messages." The purpose is to see if a child with suspected Asperger Syndrome or High Functioning Autism is able to intuit the emotional message in some music they hear.

Pausing

- Waiting time.

At this point I will frequently pause, and sometimes even "switch off" or move into the background. I am interested to see whether the child takes the initiative to move onto a new idea, return to a favourite instrument, want to go back upstairs to their family, or some other direction, or simply demand more attention from me. It is a period of transition, a time to reflect on what we have done and look for a new direction in the session.

Containing

- Continue on favourite instrument.
- Look at attention span.
- Playing to child.
- Pretend play, role play.

Various things can happen at this time. We may return to the child's favourite instrument and re-establish some work with that. I may take some time to play to the children at this point, especially if they have begun to lose their capacity to sustain their own direction. I may also introduce some structured activities at this point, such as pretend play or role play, where I may give the instruments characters, such as "Daddy drum," "Mummy drum," and "Baby drum," and see if we can enact some musical dialogue that will give an insight into children's experience of family dynamics. In evaluating a potential diagnosis of autism, this is also a musical equivalent to exploring imaginary play. I may also become more structured and directive at this point and introduce some rhythm-matching experiences with the child, where I play certain rhythms and
ask them to play rhythms back to me.

Some of what goes on at this time is an evaluation of children's ability to sustain their own attention, as well as their ability to respond to my attempts to contain and sustain their attention. It is a containing time, containing the child within a space, keeping the child near to me, keeping the child focused on the instruments and on the music we are making together.

**Sustaining**

- Amplified microphone.
- Sound bubble.
- Guitar.

The final section of the session before we close is frequently towards the end of the child's attention span and interest, and I introduce some new experiences for the child. I have an amplified microphone for vocal improvisation to see if the child can understand how to make sounds that come out through the speaker, or whether the child will listen to me making sounds. It is a time to explore vocal exchange if it has not already happened, and find out if the child will say some words, or sing, either freely in an improvised way, or a song that is familiar.

I also introduce the "sound bubble" at this time, which is an electronic instrument produced by the firm "Toys for the Handicapped" that makes a variety of different sounds, depending on which of the touch-sensitive buttons you press. This activity helps evaluate their response to physical contact, as the Sound Bubble can be used to create sound by touching parts of the body while completing a circuit. By this time, the child may still sustain interest in what is happening, or may start to reject any new developments.

**Closure**

- Saying goodbye to instruments.
- Saying goodbye to room.

I try always to close the session by taking children round to say goodbye to the instruments that they have used, as a way of stopping the session. Then we say goodbye to the room before we go back upstairs to where their parents have been watching the session. This is an important part of the session, particularly if the child has either become distressed for any reason or has started to develop strong resistance to what we are doing. It is a moment at the end
to have a final sharing of the experiences we have had, and I either encourage the child to go round and touch the instruments, or to make one or two final sounds on them as a way of saying goodbye. I have defined the elements in these sessions, and put the process into the order in which these events quite frequently occur. This order, however, sometimes varies, and, although I try to include most of these events to gain a full picture of the person engaged within these various frameworks, it is always necessary to respect the boundaries and needs of the client.

I am particularly interested in looking at the child's response to subtle variations in approach and framework. If a child is easily engaged, and enjoys close contact, I will at some point in the session establish a distance from the child and retreat from the engagement to see what happens. If the child is more responsive to structure and finds that approach easier, I introduce a period of very free activity without rules or direction. At times, I will use conventional and repertoire music, comparing this with the child's response to improvised music. While at times allowing the child the freedom to control what is happening in the session, at other times I will make demands on children to explore their reactions when under a certain amount of pressure or when they are required to participate in something to which they might demonstrate some resistance. In this particular area, a careful balance needs to be maintained, where one can go so far with children to explore their resistance, but not too far to create a potentially disturbing or damaging effect. Because we are frequently assessing children with communication disorder, I include in the session both verbal and gestural cues, and look for any evidence of abnormal or unusual responses to sound, hyperacusis, pseudo-hyperacusis or hair-trigger reactions.

The music therapist has at his disposal a wide range of instruments that children can use in therapy sessions. In a conventional therapy session, children will often choose favoured instruments, or instruments to which they feel most connected, and these may remain the instruments they use for the whole of the session. In an assessment therapy session, I am interested to explore their reaction to using a wide range of instruments, and I would feel that I had failed to gain an overview of a child's potential if one or two instruments were used exclusively during the whole sessions.

Finally, in a therapy assessment session, I am focusing on differentiating amongst autistic disorders, and am particularly interested in developing strategies for sharing and turn-taking in music making, and in the use of the instruments. When children begin to explore instruments and learn how to make music creatively, they normally use the instruments appropriately, either from having seen how to by modelling, or by instinct. The way of playing is to create music intentionally that is expressive and has musical intentionality. I have found some recurring patterns in the way some autistic children use musical instruments and create musical sounds that can separate them from children with communication disorder, or other forms of learning
disability. The following examples of autistic children’s behaviour in music therapy assessment sessions have been noted as occurring in a number of children.

**Physical and Tactile behaviour**

- Flicking and twiddling, that is, with drum sticks, small instruments.
- Spinning, that is, with tambours, cymbals, rotary drums, jingles on a tambourine.
- Fiddling, that is, with parts of an instrument, with the nut in the middle of the cymbal.
- Playing with instruments tactiley, but without musical intention, that is, turning tambourines back and forth, bunching the bars on the windchimes, plucking the strings of a guitar individually, and watching the vibration.
- Choosing instruments for their material quality, that is, being more interested in metal instruments.

**Pathological Elements in Musical Material**

- Establishing routines that don't change in the way of playing.
- Lining up instruments.
- Using instruments to play sounds in order, for example, perseverative and repetitive scale playing on the piano, xylophone, metallophone, etc.
- Sequencing, for example, making an unchanging rhythmic sequence, or playing consecutively a beat on a drum, cymbal, chair, and the floor, and repeating the sequence.

**Social Interaction and Communication Elements in Music Making**

Children on the autistic continuum reveal significant difficulties in:

Turn-taking  Sharing  Anticipating
Reflecting  Copying  Empathic Playing

Because of their lack of interest and awareness of others, they can also show a lack of interest and ability for responding to or sharing changes in tempo, rhythm, timbre, intensity, and
many other elements of a collaborative musical engagement. I am not proposing that all autistic children reveal these difficulties in assessment, or that they cannot develop abilities and motivation for these elements in interpersonal engagement in music. What needs to be clear is that an analysis of musical events and the meaning or interpretation of the child's music must be considered in terms of intentionality and meaning to either express themselves individually, initiate a connection to the therapist, or respond to music initiated by the therapist. Aspects of this process, already previously reported (Wigram, 1991, 1992, 1995a, 1995b, 1996, 1997, 1999), and the process of the session that I have described above will be illustrated in a case example.

**Analysis and Interpretation of Musical Material**

The way in which children with autism or Asperger Syndrome demonstrate their pathology in their music sets them apart from children with language disorder who look autistic. When presenting the results of a music therapy assessment, or a period of music therapy, the documentation of musical material, and the analysis of the musical experience that has been present during the session/sessions with children is fundamental and necessary. While there are many models for evaluating music therapy in the literature, very few involve a detailed analysis of musical material, and the documentation of changes or sameness in the musical material to provide supportive evidence of change or lack of change in the music therapy process. In case material in the literature, one frequently encounters clear descriptions of behavioral change in clients, with quite vague references to musical events that have led to the interpretations of change. This does not in any way invalidate the interpretation that has been made, and does not bring into question the therapeutic judgement that has been offered of the benefit of music therapy in facilitating change, development, improvement, or insight. It is unclear, however, to other music therapists, and even more unclear to other professionals, on what basis interpretations were made when there is a lack of description using musical parameters of the musical behaviour that indicated the change described.

One assessment procedure that focuses specifically on musical elements as the basis for analyzing change or lack of change in clients is the *Improvisation Assessment Profiles* (IAP's, Bruscia, 1987). Despite the fact that the IAPs have been in the literature for some years, my understanding is that there is quite a limited use of this assessment method currently. They are a complex, detailed, and extensive method of analysis, and this complexity can be off-putting to the practitioner where, when using the IAPs in their most comprehensive way, a short excerpt from a music therapy session could take several hours of analysis.

In the complete set of *Profiles*, Bruscia has defined six specific areas of investigation: autonomy, variability, integration, salience, tension, and congruence. Each profile provides
specific criteria for analyzing improvisation, and the criteria for all the profiles form a "continuum of five gradients or levels, ranging from one extreme or polarity to its opposite" (Bruscia, 1987, p. 406). The two profiles that are particularly relevant for the analysis of musical material with children who have communication disorder are Autonomy and Variability.

The autonomy profile deals with the kinds of role relationships formed between the improvisers. The scales within the profile describe the extent to which each musical element and component is used to lead or follow the other . . . The variability profile deals with how sequential aspects of the music are organised and related. Scales within the profile describe the extent to which each musical element or component stays the same or changes. (Bruscia, 1987, p. 404-405).

These two profiles are useful in differentiating between children who have autism or some other variant of pervasive development disorder or communication disorder. Autonomy helps one look closely at the interpersonal events that are going on, particularly the readiness of children to work together with me, take turns, share and act as a partner, or their propensity for resisting suggestions or becoming extremely dependent and reliant. Variability can illustrate at an inter- and intramusical level the child's capacity for creativity, or evidence of a child's rigid or repetitive way of playing that might support a diagnosis on the autistic continuum.

**Practical Application**

To use these profiles in an economic and effective way to analyze musical material, one needs to follow the recommendations and guidelines that Bruscia offers for using the IAPs. Essentially, one has to follow a process of reducing the amount of material to be analyzed to that which is both pertinent and essential, and then choosing the appropriate method within the IAPs to do it:

1. Consider whether one is focusing on intra-musical or inter-musical events, or both.
2. Choose the relevant profiles for analysis, related either to the focus of the therapy, or the questions raised for the assessment.
3. Review the entire session to be analyzed, and select sections of the session that contain some
of the most relevant material that will reap pertinent and valuable information when analyzed.

I have added to this some criteria that helped me particularly in the process of diagnostic assessment, and also continue to reduce the amount of analysis that is necessary to produce some relevant information through which one can interpret and evaluate what is happening musically in the music therapy session:

1. Based on issues related to the referral or the child's behaviour, and having reviewed musical events and the musical behaviour of the child in this session, I choose the particular musical elements on the scale most relevant for use in the analysis. The scales are quite detailed and lengthy, and it may be beneficial to select out, for example, rhythm, volume, and phrasing as three particular elements that will be fruitful for analysis.

2. I use an event-charting system, where, on looking at the video, I search for musical events that I can chart on the autonomy and the variability scale. I have generated a form for undertaking this analysis (see Table 1).

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Table 1: IMPROVISATION ASSESSMENT PROFILES
(Bruscia, 1987) Adapted - Wigram, 1996
Patient's Name: RICHIE
Typically I will select two or three sections of the session for analysis, and then select the elements of the scale that I wish to focus on (e.g., timbre, volume, and tempo) and write them in under each gradient of the two different profiles. Watching, often for two or three times, the sections I have chosen to analyze on video, I will score the number of events I can see, such as variability in tempo in the boxes. Bruscia provides a very rich resource in his descriptors of types of musical material that come under these gradients, where he describes the five different levels of either variability or autonomy in his descriptions of the IAPs (Bruscia, 1987, pp. 430, 431, 445,446,447).

When writing a music therapy report, I will draw on the data that I have generated from this analysis to interpret and cite examples of musical material that support any proposal or opinion I might be offering regarding the child's difficulties or diagnosis, particularly where I feel the musical material evidently supports a particular diagnostic position. Citations of either rhythms or melodic fragments can also be included in my music therapy assessment report. The form and its data will be kept on file, and, in some circumstances, will be attached to the report in much the same way as a data form from a cognitive psychology assessment will record the raw and standardised scores in a child's assessment.
Case Study: Richie

Richie was referred to Harper House by a Consultant Paediatrician when he was 4 years 10 months old. The referrer queried whether he had an autistic spectrum disorder, and the diagnostic hypothesis was that he had Asperger Syndrome. There were no reported problems during pregnancy, birth or in the neonatal period, and chromosomal investigations revealed no abnormalities. Richie had had glue ear when he was younger, slow acquisition of motor skills with gross and fine motor problems, and obsessive interests. During the first appointment he came across as friendly boy, but with a capacity to ask questions without paying so much attention to the answer. He also talked obsessively about ski lifts, an area of special interest about which he was very well informed. Previous local assessments had found average cognitive skills, strengths in reading, spelling, and number skills, but semantic-pragmatic difficulties in verbal expression. In terms of the triad of social impairments, Richie was reported to have poor communication skills with verbose, egocentric, one-sided conversations, a lack of true empathy, social emotional reciprocity, routine and isolated play, and poorly developed symbolic play.

A speech and language therapy (SALT) assessment revealed average language ability for his age with better receptive comprehension than expressive language. At the beginning of the SALT assessment, by way of making conversation and warming up, the therapist mentioned that she liked skiing and had recently been on a skiing holiday. Richie casually asked which ski lift she had used, and when the therapist said she really could not remember, Richie looked both puzzled and disbelieving, as if he could not understand how someone could not remember something as important as the different ski lifts available. He then started a sequence of questions about ski lifts.

A cognitive psychology assessment \( (\text{Kauffman}.ABC) \) found Richie to be in the average range (30th-50th centile), good at abstract problem solving, but weak in verbal expression. In the physiotherapy assessment, he was found to have weak motor skills (18th Centile) and difficulties with planning and coordinating movement (hopping and playing with balls). A visit to the school revealed that Richie was responsive to the teacher and liked by the other children. He was, however, socially inept, did not know how to join in with free play, or how to make friends. He was self-distracting, and had difficulty re-focusing. Finally, his preoccupation with ski-lifts was unfortunately fed by the fact that he could observe a local dry-ski slope from a position in the school playground and also, coincidentally, from his bedroom window. Therefore, he was often observed, as a forlorn little figure, standing near the fence in the playground by himself gazing up at the ski slope.
Music Therapy Assessment:

Richie had a music therapy assessment that lasted for nearly 1 hour. During this time, he improvised on the instruments, went into fantasy games and stories, imaginative play, and cooperated with me continuously. After the assessment, on reviewing the video material, I chose to analyse two specific sections of the session when we were improvising together. Subsequent events in the session are reported descriptively.

Section 1

Richie chose to play drum, cymbal, and windchimes, which he set up in a semi-circle in front of him. Using drum sticks, he began to randomly play these instruments one after another, playing from 6-8 seconds on each instrument before moving to the next. At first there was no musical structure to his playing, which was arhythmic, fairly continuously loud, and without defined rhythmic patterns. I introduced a Spanish rhythm in common time (dotted crotchet, quaver, two crotchets), using A major and G minor 7. After continuing to play randomly, he started to copy this rhythm, alternating hands, and using drum and cymbal alternately. The tempo did not change, but Richie's rhythm developed into a three-eight (crotchet, quaver, crotchet quaver) pattern, mainly on the drum, using both sticks simultaneously. I added a minor, rhythmic melody to this and followed his lead. He changed over to the windchimes, and, although this is not an instrument easy to play rhythmically, he continued his three-eight rhythm. At the same time, I started to structure the melody in phrases, which he followed. He followed the tempo I set, but, on two occasions, he broke the speed to go slower. Finally, he abandoned the drum in the middle of a phrase and reached over to use the piano.

After a short pause, he began an accelerando on the drum, following me, and then took over the lead. He sustained the accelerando, changing between his instruments, and finished with a "roll" effect on the windchimes, while I made a tremulando on the piano using a high, major chord. He returned to the Spanish rhythm on the drum, changing quickly to the cymbal and windchimes. On four occasions, during this section, I suggested rhythmic ideas, which he ignored.
Analysis of First Section

The number of events is documented in Table 2. Scoring events on the Autonomy profile, I concentrated on Rhythmic Ground, Rhythmic Figures and Phrasing. Richie was both following and leading during this section, but scored more events of Following in Rhythmic Ground and Rhythmic Figures (17) than as a Leader (12). His ability to follow phrases or take the initiative in ending a phrase was balanced. While Bruscia identifies Resister as the other end of the spectrum of Autonomy from Dependent, Richie did not demonstrate characteristics of resistance in his playing, and I prefer to regard the events I scored in rhythmic change and tempo change as "Independent" playing, rather than Resister. Scoring events on the Variability scale, Richie's playing was more contrasting. Again using Tempo and Rhythmic Figures, once he followed a lead, he maintained stability in his tempi (four events), but there was more Variable and Contrasting playing in Rhythmic Figures (five events). I scored Timbre in terms of the variability of his use of instruments. There was less stability here (three events), with a greater amount of variability and contrast (five and six events respectively), where he was frequently changing instruments.

Cf. Table 2

Interpretations and Conclusions from the Analysis of Section 1

From a diagnostic point of view, Richie was presenting as a cooperative and flexible child. The cooperation is measured by the number of events in the analysis of the music where Richie both followed (hearing my musical ideas and matching them) and led (establishing a new idea) and, at the same time, matched my accompaniment when I joined him musically. The analysis of his variability generally revealed flexibility, although perhaps one might classify his need to consistently change instruments in order as a rigid pattern more typically found in children on the spectrum. But he was not rigid, and what was noticeable in his music making was the closeness with which he stayed to the musical structures and framework I offered. Pathologically, this is a more typical characteristic of children with Asperger Syndrome, who are motivated to establish and develop contact, and the reciprocity he demonstrated is a positive strength, as it indicated an interest in the material presented by another, rather than perseveratively sustaining his own material. So, in the analysis of this section, while there were some patterns, Richie was able (at a nonverbal level) to achieve flexibility and variability in his playing, responding to musical ideas, and taking the musical initiative.
Section 2

This opened with Richie reorganising the instruments and bringing in a snare drum and a metallophone. He used me to help position them where he wanted them. I proposed that he take the lead, and then followed him (using the piano) by playing a supportive music. He agreed with this and I waited for him to start. He began pulsed beating on the drum with alternate hands. After 10-12 seconds, he played on the metallophone with one hand, then moved the other hand to play the cymbal. Soon after, he began rapidly moving from one instrument to another, perhaps with the intention of trying to simultaneously include all of them in his improvisation.

He still played in a pulsed way, and, because of his previous improvisation where he demonstrated good rhythmic skill, I introduced a melody on the piano ("Twinkle Little Star"). After the first phrases, he began to match the melodic rhythm of the song. I made a transition, extemporising on the theme (which he followed) into "Polly put the Kettle on". He began by following the rhythm, mainly using his right hand. Richie had become confident with the instruments by now, and started again to move between the five instruments he had in front of him. He began to push the tempo on, accelerating the melody, but still maintaining the phrases of the song.

As if losing interest in the melodic sequence of this song, Richie then returned to the Spanish rhythm, varying his playing between cymbal and metallophone. He introduced a steady pulse, and I developed a sequential downward chordal passage of first inversions on the piano. Richie matched the pulse well and slowed down with me at the end. I decided to generate a faster speed, which Richie followed on the drum, and together we began playing so fast that the sense of pulse broke down into chaos, as Richie jumped frantically and excitedly from one instrument to another. He started to copy glissandi, initiating rapid sideways movements on the drum. He introduced a two-note theme, which I immediately picked up, and a rapid dialogue of two-note patterns followed, returning for a brief period to the three-eight rhythm (initiated by Richie). Then a dissonant, dance-like rhythmic melody on the piano settled the pulse again to a steady pattern, where Richie played in pulse alternating every beat between the snare drum and the large drum. This was well coordinated. During this last part of Section two, Richie watched me intently, both to follow my musical direction, and also to rapidly interject his own ideas, and ensure that I had heard them.

Analysis of Section 2

This was a long section of playing to analyze. On the Autonomy profile, many events of Follower, Partner, and Leader were scored, while there were only three events when Richie
appeared to resist or remain independent of tempo changes I proposed (see Table 2). He initiated many changes of tempo (13), while at the same time following my tempo (8), and he also introduced his own Rhythmic Figures on eight occasions, following my lead on six occasions. Because I was playing a melody instrument, I inevitably remained more influential in establishing musical phrases, and he followed my phrasing on eight occasions. In terms of the Variability of his playing, I mainly noticed the frequent changes of instrument (nine events of Variable playing and seven of Contrasting). His tempos, both when he followed and when he led, were between Stable (7) and Variable (6), and there was significant Variability in the Rhythmic Figures he played in this Section (8).

**Interpretations and Conclusions from the Analysis of Section 2**

Richie was beginning to reveal a welcome capacity for initiating and developing musical ideas. While the extreme variability with which he plays (moving quickly between the five instruments) could also be interpreted as a repetitive pattern, he never lost the connection to my playing, as demonstrated by the lack of events where he "resisted" or ignored my musical themes and frames. The reciprocity within the interaction, emerging in the first Section, become more pronounced, as he demonstrated his ability to follow ideas, and introduce his own material at moments of change or transition in the musical improvisation. The overall score of 23 (Variable) demonstrated his flexibility when compared to the healthy balance between Stable (11) and Contrasting (10) events. Confidence in his playing and in the way I was following and supporting him musically was reflected in the numerous occasions when he took the lead either with pulse or tempo (21).

**Diagnostic Conclusions from the Analyses**

These analyses revealed an encouraging level of interpersonal and intermusical dialogue, which, despite the clear evidence in favour of a diagnosis of Asperger Syndrome from other assessments, and from his early and current history, can be seen as significant strengths in his preparedness for developing communication and learning.

**Descriptive Account of Other Events in the Session**

*Instruments and animals.* I suggested we think about the instruments as animals, and, having let Richie make his choice, I subsequently encouraged him to act out a musical game where the "animals" (instruments) met each other and played or fought with each other. His
choice was as follows:

- cymbal -- goat.
- drum -- cow.
- windchimes -- cat.
- snare drum -- dog.
- metallophone -- mouse.

He began an improvisation, playing two-beat (barking) sounds on the snare drum, and then switching to the windchimes for the cat. He played a steady beat on the cymbal to represent the goat, and moved to the base drum, which he again played in a slower beat to represent a cow walking. I asked him what the cow was doing, to which he replied: "the dog's saying hello to the cow" (playing his barking theme on the snare drum). Finally, he introduced the mouse with a downward scale on the metallophone very softly. His dynamics on the instruments were quite reflective of the animals, with the cow being played loudly and the cat very gently and softly on the windchimes. At the same time, I tried to sustain his ideas on these instruments, bearing in mind his capacity for rather rapidly moving from one instrument to another and not really developing an idea. If I continued playing on the piano, he sustained his playing. When I asked him what happens when the cat saw the mouse, he replied: "he runs away," and played fast both on the metallophone and the windchimes at the same time (representing mouse and cat moving fast). This was a clear indication that he had picked up the concept of representing musically the activities of the animals. After representing the animals going to sleep, he introduced the idea that the cat woke up and saw the mouse again, and chased him. In succession, the goat and then the dog woke up, and he played the right instruments each time for the animals, tending to play gradually accelerating tempi and louder sounds on the instruments to indicate a high level of activity. After just 4 or 5 seconds of this, he then decided they were all going to go to sleep again, and looked carefully at me as I played slow, soft music, matching it on the cymbal. He even decided to take the snare drum, snares off, so that the sound of the dog would be more calm and quiet.

He entered into this imaginative game very well, considering the difficulties children on the autistic spectrum and with Asperger Syndrome have in creating imaginative characters. He played in a very appropriate way for the different animals, and always remembered which instruments were representing which animals.

*Feelings in music.* I was particularly interested with Richie to see if he had the ability to represent an emotional feeling in music. I wanted to see if he could play in a way that would match a certain type of emotional state. We did this as a duet on two pianos, and I first suggested that he could play a feeling of being really angry. I asked him what would make him feel really
angry, and he said: "if someone lied to me." I asked him if he could remember what it felt like when he was angry and suggested we play "angry music." I tried to prepare him for expressing the feeling by asking him to imagine feeling angry, and then repeating three times: "I am feeling really angry." Then I simply said, "now . . . play." He immediately turned to the piano and began using the heel of both his hands to press down notes in a repetitive pulsed strong and loud way. He looked at the piano for 10 seconds and then started to glance round to me, because I was supporting this playing in the same way on my piano. He was half smiling, however, and I was not sure at all whether he was really expressing a feeling inside him of anger, or simply playing "angry sounding music."

I suggested we try something else, and he immediately said "I know...let's play as if we are feeling really sad." He began playing very softly on the piano, and then moved his right hand up to the very top of the piano, playing a little melody that was repetitive and rather limited as if he was in a very isolated state. I supported it with soft chords, mainly minor, to try and empathise with whatever feelings he was having of sadness. At first he was watching me, but, as he became more involved in producing this high pitched melody, he looked at his own piano, and seemed more involved in his playing. As soon as he had finished, I asked him what he was thinking about, and what makes him feel sad. He responded: "when nobody wants to play with you."

**Conclusion to the Case Study on Richie**

This was the first and only session that I undertook with Richie. It was an exciting and dynamic session, which revealed a number of very interesting aspects of his personality, and also demonstrated some important strengths in his abilities, despite his diagnosis. The analysis of his musical material revealed a capacity for variable playing and the ability to engage at a very sensitive and creative interpersonal and intermusical level. This is very positive, considering autistic spectrum, and Asperger disorders often reveal more rigid and resistive aspects, particularly a lack of reciprocity. While there was no doubt about the diagnosis, the potential for his creative play was fully demonstrated in this therapy session, and reinforces the value and importance of assessments such as music therapy for identifying this.

Subsequently, the various aspects of the session, where I initiated ideas such as playing instruments in a story about animals and representing emotions in music (among other events), also tease out aspects of his imaginative way of thinking that could be seen as incongruent with a diagnosis of Asperger Syndrome. There was, however, something rather structured about the way he played, albeit the potential for developing creative play was there. The possibility for going into experiences with creative play is particularly reinforced by being able to centre it in a musical experience, without which he might not have demonstrated such free-flowing
imaginative ideas.

Although I have described a pro forma structure to an assessment session earlier in this chapter, the way this session developed was nevertheless a creative process where one event followed another. Having undertaken musical improvisation without themes, the introduction of the theme of the animals developed Richie's ability to create characters in his music. This led onto a pretend game about waking up, eating breakfast, and drinking tea (not described here). I then deliberately introduced the concept of representing emotions in music, because I felt by this time he had relaxed and was already demonstrating his capacity for humour and laughter. I wanted to find out whether he could also represent other emotions, which he did, rather effectively. Finally, returning to a fantasy story, he produced a lot of material from his imagination, supporting it in his musical improvisation which I had not expected, but at the same time we both knew that this was a fantasy and he was "telling me a funny story".

General Conclusion

Flexibility is an important element in music therapy assessment. Every child is different, and, while there is a need for structure and comprehensiveness in undertaking diagnostic assessment, one needs to be very adaptable to a situation in order to pick up the potential of a child or an adult. Using the improvisation assessment profiles is a very effective way in analyzing musical material, and the profiles of autonomy and variability are particularly appropriate in looking at events that can differentiate children with autism and Asperger Syndrome from children who may have language disorder, but without a perseverative element to their pathology. At the same time, depending on the child, the analysis of musical material can provide some very concrete evidence in the form of the events that take place on specific musical elements to identify strengths and weaknesses in children's interactive skills and variability in their playing. It is necessary to make such an analysis in order to support what might be an intuitive understanding of a child's ability, without some of the quite significant and concrete events, from a quantitative point of view the frequency and number of those events, one is not able to give a definitive opinion based on clear evidence. Of course there are limitations in the excluding and reductionist nature of the process. Music therapy improvisation gives us a very rich source of material for analysis, and the method that I have been using in the structure I have described, followed by the analysis model using the IAPs also relies on good judgement by the therapist to follow an appropriate and fruitful process in the session. One also has to select out relevant sections and musical elements in the scales for analysis. There is undoubtedly an element of individual bias and selective interpretation.

The results of an analysis, and the interpretations one can make, however, need to be
taken into consideration of the wider picture. In the Harper House Children's Service, this means the conclusions one can draw from a music therapy session have to be balanced and compared with the conclusions that other therapists have drawn. In the case of Richie, other assessments had found difficulties in expressive language, motor skills, and also difficulties in attention. Comparing this with the music therapy assessment, there was clear evidence of good attention, a lack of obsessional interests, and an ability to participate in imaginative stories. At the same time, there was some rather concrete symbolism, and, to some extent, while he was responsive to slapstick humour, he was not so aware of subtle humour.

As stated at the beginning of this chapter, music therapy provides an important part of the picture. Both in terms of the potential for free play, and also for more structured and directed play, music therapy offers a unique space for children to demonstrate their strengths, perhaps more than their weaknesses, and this can add considerably to the material evident from a full assessment that will provide a positive way forward for both parents, educators, and others involved with a child with a communication disorder.
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