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EDITORIAL

Advancing knowledge in music therapy

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It is now over 20 years since Ernest Boyer – an educator from the US and, amongst other posts, President of the Carnegie Foundation for the Advancement of Teaching – published his influential piece *Scholarship Reconsidered* (1999). In this document, he sought to broaden the notion of scholarship as considered in universities in his homeland. He felt that the term 'scholarship' was inextricably linked with the concept of research, meaning that expected scholarly outputs were peer-reviewed journal papers and conference presentations. Seeking to acknowledge and bring value to the range of work that scholars were undertaking, he developed a paradigm that sought to clarify and make more visible the range of applied and written work being produced. He proposed four elements of scholarship: discovery, integration, application, and teaching. In his view, this could allow for a free flow of thinking between different aspects of scholarly work and encourage a more cyclical journey for those working in academic institutions. His initial thinking utilised what could be described as a non-hierarchical taxonomy of scholarship as shown in the table below (Table 1) that I have adapted to bring it closer to the world of music therapy (Coombes, 2021).

Boyer's elements	Field of impact
Discovery	Research/evaluation projects.
Integration	Interdisciplinary work and discourse.
Application	Clinical work/development of methods.
Teaching	Sharing learning through teaching/informing a range of populations including students, professionals and the general public.

Table 1: Boyer's model of scholarship (adapted by Coombes, 2021)

The current position of music therapy scholarship is continuing to develop with an increasing number of practitioners and researchers choosing to share their work in a variety of ways. In her article of 2014, Wheeler explores the different types of research and music therapy writings that exist. She

suggests that these varieties exist according to the level of development of the profession in certain parts of the world. I also wonder whether this is true when we consider the scholarly development of individual music therapists. It can be daunting for individual practitioners to find a way to launch themselves into the world of research and writing in many professions. By offering a range of submission genres and encouraging participation in journals in a variety of forms, professional development for music therapists is promoted. This has the potential to lead to increased participation in scholarly activity with potential implications for the music therapy profession in general.

Viewing music therapy scholarship in this expanded paradigm, allows a more flexible framework for the development of our knowledge base. These wider parameters of discourse facilitate a broad range of voices that are able to participate in the generation of knowledge in the field.

The current issue of *Approaches* with its range of publication types could be seen in the light of this paradigm. Once we acknowledge this broadening of the scope of scholarship, it becomes clear that we can underpin the evidence base for music therapy work with a wider range of outputs, while also facilitating an increased range of voices participating in music therapy discourse.

In this issue we see a range of writing that offers us the opportunity to experience the richness of developing scholarship in our profession. The issue contains five articles, five book reviews, three conference reports and a letter to the editor responding to a book review published in a previous issue. Kathleen Skinner, Ashley Kurkiian and Heidi Ahonen have contributed two articles that scope and explore Bruscia's clinical techniques for improvisational music therapy. Ana Rita Maia and Jose Morgado use the Sounds of Intent framework with a specific population in music therapy work, while Alberto Balducci provides a clinical report framed within the concept of forms of vitality (Stern, 2010) and microanalysis. Therapeutic Music Training (TMT), a method devised by Cheryl Jones, brings us to yet another realm of music therapy practice, describing a method of achieving therapeutic work using instrumental pedagogy. Viewing these through Boyer's lens enables us to see an exciting range of research, interdisciplinary discourse and practice that speaks very much to the values of the journal. *Approaches* promotes interdisciplinary dialogue and mutual exchange, welcoming contributions from a broad field of related disciplines. It seems that this is reflected in the aforementioned articles, and also in the content of the other publication genres included here.

The book reviews included in this issue engage critically with texts that contain early music therapy writings from 1951-60, new music therapy models including transpersonal and Guided Imagery and Music developments, a revisiting of the work of Bakhtin relating to music therapy improvisation and Hanser's book that explores music therapy through the lens of an integrative health perspective. This latter review stimulated a letter to the editor that promotes further critical dialogue in the field. In addition, conference reports offer the readership insight into three events that demonstrate the wealth of knowledge being offered within the music therapy profession. These reports focusing on music and medicine, autism and embodiment in music can be linked to Boyer's 'teaching' element as categorised in Table 1.

I hope that using Boyer's revisioning of the concept of scholarship to reflect on the contents of the issue encourages practitioners and researchers to reconsider and expand their contributions to the music therapy body of knowledge. Using this paradigm as a starting point there is the potential to stimulate debate and discourse by demonstrating the value of diverse ways of advancing knowledge in music therapy while we shift between different positions and within different frameworks.

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ΣΗΜΕΙΩΜΑ ΣΥΝΤΑΞΗΣ

Εξελίσσοντας τη γνώση στη μουσικοθεραπεία

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ΒΙΟΓΡΑΦΙΑ ΣΥΓΓΡΑΦΕΑ
Η **Δρ. Elizabeth Coombes** είναι μουσικοθεραπεύτρια, ερευνήτρια και εκπαιδευτικός. Ηγείται του μεταπτυχιακού προγράμματος μουσικοθεραπείας στο Πανεπιστήμιο της Νότιας Ουαλίας. Στο επίκεντρο της έρευνάς της βρίσκεται η ταυτότητα του μουσικοθεραπευτή του 21ου αιώνα, συμπεριλαμβάνοντας τους τρόπους με τους οποίους μπορεί το επάγγελμα να επηρεάσει την πρακτική άλλων επαγγελμάτων υγείας. [elizabeth.coobmes@soutwhales.ac.uk]

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Υποβολή 13 Νοε 2021
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Έχουν περάσει πάνω από 20 χρόνια από τότε που ο Ernest Boyer – εκπαιδευτικός από τις Η.Π.Α., και, μεταξύ άλλων θέσεων που κατείχε, Πρόεδρος του Ιδρύματος Carnegie για την Προαγωγή της Διδασκαλίας – δημοσίευσε τη σημαντική πραγματεία του με τίτλο *Scholarship Reconsidered* (1999). Σε αυτό το κείμενο, επιχείρησε να διευρύνει την έννοια της ακαδημαϊκότητας [scholarship] όπως αυτή χρησιμοποιούταν σε πανεπιστήμια της πατρίδας του. Αισθάνθηκε ότι ο όρος «ακαδημαϊκότητα» ήταν άρρηκτα συνδεδεμένος με την έννοια της έρευνας, σημαίνοντας πως τα αναμενόμενα ακαδημαϊκά παράγωγα ήταν άρθρα επιστημονικών περιοδικών και εισηγήσεις σε συνέδρια ομότιμης αξιολόγησης. Επιδιώκοντας να αναγνωρίσει και να προσδώσει αξία στο εύρος του έργου που αναλάμβαναν οι ακαδημαϊκοί, ανέπτυξε ένα θεωρητικό παράδειγμα με στόχο να αποσαφηνιστεί και να γίνει πιο ορατό το φάσμα του εφαρμοσμένου και του συγγραφικού έργου που παρήγαγαν οι ίδιοι. Πρότεινε τέσσερα στοιχεία ακαδημαϊκότητας: την ανακάλυψη, την ένταξη, την εφαρμογή, και τη διδασκαλία. Κατά την άποψή του, αυτό το παράδειγμα μπορούσε να επιτρέψει μία ελεύθερη ροή σκέψης ανάμεσα στις διαφορετικές όψεις του ακαδημαϊκού έργου και να προτρέψει όσους εργάζονται σε ακαδημαϊκά ιδρύματα να ακολουθήσουν μία περισσότερο κυκλική πορεία. Στην αρχική του σκέψη αξιοποίησε κάτι που θα μπορούσε να περιγραφεί ως μία μη-ιεραρχική ταξινομία όπως φαίνεται στον παρακάτω πίνακα (Πίνακας 1), τον οποίο έχω προσαρμόσει για να τον φέρω πιο κοντά στον κόσμο της μουσικοθεραπείας (Coombes, 2021).

Η παρούσα θέση της ακαδημαϊκότητας στη μουσικοθεραπεία εξακολουθεί να εξελίσσεται με έναν αυξανόμενο αριθμό επαγγελματιών και ερευνητών να επιλέγουν να κοινοποιούν το έργο τους με διάφορους τρόπους. Σε άρθρο της το 2014, η Wheeler διερευνά τους διαφορετικούς τύπους έρευνας και μουσικοθεραπευτικών συγγραμμάτων που υπάρχουν. Προτείνει ότι αυτή η ποικιλομορφία υφίσταται σύμφωνα με το επίπεδο εξέλιξης του επαγγέλματος σε συγκεκριμένα μέρη του κόσμου. Αναρωτιέμαι επίσης εάν αυτό αληθεύει όταν αναλογιζόμαστε την ατομική ακαδημαϊκή ανάπτυξη των μουσικοθεραπευτών. Μπορεί να αποτελεί πρόκληση για μεμονωμένους επαγγελματίες να βρουν τρόπο να εισέλθουν στον κόσμο της έρευνας και της συγγραφής σε πολλά επαγγελματικά πεδία. Προσφέροντας ένα εύρος τύπων υποβολής κειμένων

και ενθαρρύνοντας τη συμμετοχή σε επιστημονικά περιοδικά με διάφορους τρόπους, προωθείται η επαγγελματική εξέλιξη των μουσικοθεραπευτών. Αυτό δύναται να οδηγήσει σε μία αυξανόμενη συμμετοχή σε ακαδημαϊκή δραστηριότητα με πιθανές επιπτώσεις στο επάγγελμα της μουσικοθεραπείας γενικότερα.

Τα στοιχεία του Boyer	Πεδία επιρροής
Ανακάλυψη	Ερευνητικά/αξιολογητικά προγράμματα.
Ένταξη	Διεπιστημονική εργασία και διάλογος.
Εφαρμογή	Κλινικό έργο/ανάπτυξη μεθόδων.
Διδασκαλία	Μοίρασμα γνώσης μέσω διδασκαλίας/ενημέρωσης ενός εύρους πληθυσμιακών ομάδων συμπεριλαμβανομένων φοιτητών, επαγγελματιών και του ευρύτερου κοινού.

Πίνακας 1: Το μοντέλο της ακαδημαϊκότητας του Boyer (προσαρμογή από την Coombes, 2021)

Η μελέτη της ακαδημαϊκότητας στη μουσικοθεραπεία υπό το πρίσμα αυτού του διευρυμένου θεωρητικού παραδείγματος, επιτρέπει ένα πιο ευέλικτο πλαίσιο για την ανάπτυξη της βάσης της γνώσης μας. Αυτές οι διευρυμένες παράμετροι επιστημονικού διαλόγου δίνουν χώρο για ένα ευρύ φάσμα φωνών που μπορούν να συμμετέχουν σε αυτή τη δημιουργία γνώσης στο πεδίο.

Το παρόν τεύχος του *Approaches*, με την ποικιλία τύπων δημοσιεύσεων που προσφέρει, μπορεί να ιδωθεί μέσα από το πρίσμα αυτού του θεωρητικού παραδείγματος. Όταν αναγνωρίζουμε αυτή τη διεύρυνση της εμβέλειας της ακαδημαϊκότητας, γίνεται εμφανές ότι μπορούμε να υποστηρίξουμε την τεκμηρίωση του μουσικοθεραπευτικού έργου με μία ευρύτερη γκάμα παράγωγων, ενώ ταυτόχρονα να διευκολύνουμε τη συμμετοχή ενός αυξανόμενου φάσματος φωνών στον μουσικοθεραπευτικό διάλογο.

Σε αυτό το τεύχος βλέπουμε ένα εύρος συγγραμμάτων προσφέροντάς μας την ευκαιρία να βιώσουμε τον πλούτο της ακαδημαϊκής εξέλιξης στο επάγγελμά μας. Το τεύχος περιλαμβάνει πέντε άρθρα, πέντε βιβλιοκριτικές, τρείς αναφορές συνεδριών και μια επιστολή προς τον συντάκτη η οποία ανταποκρίνεται σε μία βιβλιοκριτική που δημοσιεύτηκε σε προηγούμενο τεύχος. Οι Kathleen Skinner, Ashley Kurkjian και Heidi Ahonen δημοσιεύουν δύο άρθρα στα οποία διερευνούν τις κλινικές τεχνικές του Bruscia για την αυτοσχεδιαστική μουσικοθεραπεία. Οι Ana Rita Maia και Jose Morgado χρησιμοποιούν το πλαίσιο του Sounds of Intent [Ήχοι Πρόθεσης] με έναν συγκεκριμένο πληθυσμό στο μουσικοθεραπευτικό έργο, ενώ ο Alberto Balducci παρουσιάζει μία κλινική αναφορά βασισμένη στη θεωρία των μορφών ζωτικότητας [forms of vitality] (Stern, 2010) και τη μικροανάλυση. Η Θεραπευτική Μουσική Εκπαίδευση [Therapeutic Music Training, TMT], μία μέθοδος που αναπτύχθηκε από την Cheryl Jones, μας εισάγει σε ένα ακόμα πεδίο της μουσικοθεραπευτικής πρακτικής, περιγράφοντας μία μέθοδο για την επίτευξη του θεραπευτικού έργου μέσω της παιδαγωγικής μουσικών οργάνων. Παρατηρώντας τα παραπάνω μέσω του πρίσματος του Boyer, μας επιτρέπεται να δούμε ένα συναρπαστικό φάσμα έρευνας, διεπιστημονικού διαλόγου και πρακτικής που αντικατοπτρίζει τις αξίες του περιοδικού. Το *Approaches* προωθεί τον διεπιστημονικό διάλογο και την αμοιβαία ανταλλαγή, καλωσορίζοντας τη

συμβολή ενός ευρέως πεδίου συναφών επιστημονικών χώρων. Φαίνεται πως αυτό αντανακλάται στα προαναφερόμενα άρθρα καθώς και στο περιεχόμενο των άλλων τύπων δημοσιεύσεων που συμπεριλαμβάνονται εδώ.

Οι βιβλιοκριτικές που φιλοξενούνται σε αυτό το τεύχος εξετάζουν με μια κριτική ματιά κείμενα που συμπεριλαμβάνουν πρώιμα μουσικοθεραπευτικά συγγράμματα από το 1951-60, νέα μοντέλα μουσικοθεραπείας συμπεριλαμβάνοντας εξελίξεις στη διαπροσωπική θεραπεία και την Καθοδηγούμενη Νοητική Απεικόνιση και Μουσική [Guided Imagery and Music, GIM], μία επανεξέταση του έργου του Bakhtin σε συνάρτηση με τον μουσικοθεραπευτικό αυτοσχεδιασμό και το βιβλίο της Hanser που διερευνά τη μουσικοθεραπεία υπό το πρίσμα μίας ενοποιητικής προοπτικής για την υγεία. Αυτή η τελευταία βιβλιοκριτική αποτέλεσε το έναυσμα για μια επιστολή προς τον συντάκτη που προωθεί περαιτέρω την κριτική συζήτηση στο πεδίο. Επιπλέον, οι αναφορές συνεδρίων προσφέρουν στο αναγνωστικό κοινό μια εικόνα για τρία δρώμενα που επιδεικνύουν την πληθώρα της γνώσης που προσφέρεται εντός του επαγγέλματος της μουσικοθεραπείας. Εστιάζοντας στη μουσική και την ιατρική, στον αυτισμό και στην ενσωμάτωση [embodiment] στη μουσική, αυτές οι αναφορές μπορούν να συνδεθούν με το στοιχείο της «διδασκαλίας» του Boyer όπως κατηγοριοποιείται στον Πίνακα 1.

Ελπίζω η χρήση της αναθεώρησης της ακαδημαϊκότητας του Boyer, ως εργαλείο αναστοχασμού για τα περιεχόμενα αυτού του τεύχους, να ενθαρρύνει τους επαγγελματίες και τους ερευνητές να επανεξετάσουν και να διευρύνουν τις συνεισφορές τους στο σύνολο της γνώσης της μουσικοθεραπείας. Η χρήση αυτού του θεωρητικού παραδείγματος ως αφετηρία, μπορεί να διεγείρει μία ανοιχτή συζήτηση και έναν διάλογο αναδεικνύοντας την αξία των ποικίλων τρόπων εξέλιξης της γνώσης στη μουσικοθεραπεία καθώς κινούμαστε ανάμεσα σε διαφορετικές θέσεις και εντός διαφορετικών πλαισίων.

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ARTICLE

Bruscia's clinical techniques for improvisational music therapy in autism research: A scoping review

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ABSTRACT

This scoping review explores Bruscia's (1987) clinical techniques for improvisational music therapy as they relate to music therapy in autism research to determine the most commonly used clinical techniques in music therapy with clients with autism. The work was undertaken as a preliminary step in a pilot study to explore how the techniques can be represented in terms of individual ways of playing, musical relationships; and how the use of the techniques impacts the participant's experience of musical connection, influence, and expression. To be included in the screening, the research articles had to employ improvisational music therapy with clients with autism, and label the techniques used, or provide a clear description of them. In addition, it was required that articles were published in a peer-reviewed journal. Based on the qualitative thematic analysis, currently the most commonly used clinical improvisation techniques with autistic clients are as follows: imitating, reflecting, synchronising, extending, symbolising, holding, incorporating, and rhythmic grounding.

KEYWORDS

autism,
Bruscia's clinical improvisation techniques,
improvisation,
music therapy

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INTRODUCTION

For decades, research has demonstrated music therapy's value in treating core deficits of autism spectrum disorder (ASD). The Cochrane Review of music therapy and autism in both 2006 and 2014 concluded that music therapy with individuals with ASD may improve "social interaction, verbal

communication, initiating behaviours, and social-emotional reciprocity" (Geretsegger et al., 2014, p. 2) and is considered superior to standard care. That being said, the research community calls for higher-quality research to continue demonstrating efficacy and deepening understanding. In both reviews, the authors identified a deficit in the sample size and the need for overall improvement in study design (Geretsegger et al., 2014; Gold et al., 2006).

The largest autism and music therapy study completed to date was conducted with 364 children with autism in 9 countries; the purpose was to examine the effects of improvisational music therapy on autism symptom severity (Bieleninik et al., 2017). The study provided a clear description of most facets of the research method, except the music therapy techniques used. The only indications of the nature of therapy were the mention of synchronisation, mirroring, and grounding, and a reference to consensus principles developed for the study (Bieleninik et al., 2017). Without a description of the music therapy techniques, readers are unable to determine how the music therapists delivered therapy, resulting in an inability to reproduce the method.

In general, the production of consistent, reproducible techniques in improvisational music therapy (IMT) research with individuals with autism remains elusive. The main difficulty in addressing this facet of research seems to lie in the individualised and flexible nature of IMT. Geretsegger et al. (2014) identified the essential and unique components of IMT with individuals with autism as the facilitation of musical and emotional attunement; scaffolding the flow of interaction musically, and tapping into a shared history of musical interaction. To accomplish such attunement and musical relationship the music therapist must skilfully assess and implement the appropriate therapeutic interventions with their client. The process of building an effective therapeutic relationship requires flexibility and the ability to individualise treatment to address the client's needs. This process is not only highly variable in a clinical context, it can also be interpreted differently by the reader. In a research context it is helpful if researchers are able to clearly structure and describe their interventions so they can be reproduced by others. However, adhering to a research-focused treatment guide while working effectively to build therapeutic relationship in IMT can be a challenging task.

In the 2015 study "Music Therapy: An Effective Approach in Improving Social Skills of Children With Autism", Ghasemtabar et al. directly acknowledged methodological weaknesses in past music therapy research, and designed a methodology to accurately measure and clearly portray the effectiveness of improvisational music therapy with individuals with autism (Ghasemtabar et al., 2015). Treatment guidelines were also developed by Geretsegger, Holck, Carpente, Elefant and Kim (2015) through qualitative research in "Common Characteristics of Improvisational Approaches in Music Therapy for Children With Autism Spectrum Disorder: Developing Treatment Guidelines". One way to address the above-mentioned difficulties is to find a way to standardise the terminology and techniques involved in clinical improvisation, and to implement them with purposeful clinical rationale. Bruscia's (1987) taxonomy of 64 clinical techniques for IMT is an already-existing framework that could be used to standardise terminology.

The literature demonstrates that Bruscia's techniques have been taught in educational contexts and utilised in clinical work and research. That being said, there is evidence of the techniques being identified incorrectly in research, and new terms and definitions being coined to describe similar therapeutic techniques. This results in a lack of clarity in research methods. That is,

without explicit definitions it is difficult to determine what techniques are being used in music therapy research. This ambiguity likely stems from a misunderstanding of the techniques themselves; many are abstract, and Bruscia's instructions for their implementation within a therapy session may be interpreted in different ways. We have undertaken this work as a preliminary step in a pilot study to explore how the techniques can be both quantitatively and qualitatively represented in terms of individual ways of playing, musical relationships; and how the use of the techniques impacts the participant's experience of musical connection, influence, and expression. To date, no research has examined the techniques in an experimental context with clients with autism in order to learn more about their implementation, use, and related clinical outcomes.

PURPOSE AND RESEARCH QUESTIONS

In this article we seek to address the above-mentioned research gap relating to clinical improvisation techniques—aiming to determine Bruscia's most commonly used clinical techniques within the context of work with children with autism, and to clarify their definitions. Our research questions are as follows:

1. What clinical improvisation techniques have been primarily used in autism research?
2. How are these techniques defined in comparison to Bruscia's taxonomy of 64 clinical techniques for IMT?

LITERATURE REVIEW

Autism and music therapy

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder with a variety of manifestations, as indicated by the term "spectrum". Common core characteristics of the disorder include impairments in communication and social skills, including difficulties with emotional expressivity, relating and building relationships (Pinel, 2013). Addressing these characteristics with therapeutic techniques can be challenging, due to difficulties building relationships (Kim et al., 2009). There is a large body of research indicating that improvisational music therapy (IMT) can address many of the core deficits of ASD, allowing individuals to explore emotional expressivity and build relationship through spontaneously created music (Gold et al., 2006).

This body of research began building decades ago, pioneered by the work of Juliette Alvin, author of the text *Music Therapy and the Autistic Child* (Alvin, 1978). In this text, Alvin combines theory and practice by both introducing her model of Free Improvisation, as well as providing case studies exemplifying the use of particular improvisational techniques (Warwick & Alvin, 1991). Alvin's work was one of the first texts to focus specifically on work with autistic clients, and demonstrated the value of clinical improvisation with this clientele. Paul Nordoff and Clive Robbins (2007) also played an important role in contributing both theory and demonstrating the value of clinical work, through their work with individuals with disabilities. Their concepts of meeting and matching (Nordoff & Robbins, 2007) are often used by music therapy clinicians and researchers to describe musical interactions that meet the client in their current experience and then match this experience

musically. Nordoff and Robbins (2007) make reference to the power of creating a musical representation of the client's experience through meeting and matching saying, "When you play, or play and sing to express the intensity of and quality of a child's crying or the urgency of her protests, she hears something that corresponds to what she is feeling and expressing. Her experience of herself becomes related to her experience of the music. The music accepts and meets her state while it matches, accompanies, and answers, and enhances her expression, emotionally and physically" (p. 209).

Bruscia's 64 clinical techniques

In his text *Improvisational Models of Music Therapy,* Kenneth Bruscia (1987) introduces a taxonomy of 64 clinical techniques that are fundamental to clinical improvisation. Bruscia developed this taxonomy in an attempt to create consistent vocabulary to be used in all models of clinical improvisation, translating to increased clarity in music therapy practice and literature. According to Bruscia (1987): "one of the difficulties encountered in reviewing the literature is that the same term is often used to refer to different techniques, and that different terms are often used to refer to the same technique." (1987, p. 533).

The techniques are named and categorised based on the focus, clinical objectives, and mode of implementation. The categories are as follows: 1. techniques of empathy, 2. structuring, 3. intimacy, 4. elicitation, 5. redirection, 6. procedural, 7. emotional exploration, 8. referential, and 9. discussion techniques (Bruscia, 1987). A complete listing and description of the 64 techniques can be found in Chapter 37 of *Improvisational Models of Music Therapy* (1987). Bruscia developed the categories and delineated the techniques by examining similarities and differences in the areas mentioned above: focus, objectives, and implementation.

When utilising different techniques, the therapist may focus on different aspects of the client and the experience, influencing how the therapist observes, assesses and carries out the intervention. If a clinician uses a technique that focuses more on the client's verbalisations, it would be more likely to be categorised as a discussion technique. Technique objectives can vary significantly and were an important way to delineate and group together techniques. For example, the main objective of 'structuring techniques' is to provide ground and contain the client's music. Finally, Bruscia considered the different modalities used to implement the technique (i.e. movement, verbalisation or music), when creating categories. It is also important to note that some techniques share considerable similarities when considering their focus, objective, or implementation, and are rarely used in isolation (Bruscia, 1987). This will be important to consider when attempting to isolate the use of techniques in research studies.

Since Bruscia's text was published, the use, definition, and implications of the techniques have been investigated further and new techniques have been coined. Tony Wigram's (2004) *Improvisation: Methods and Techniques for Music Therapy Clinicians, Educators, and Students* explores the techniques and provides readers with a guide to the various clinical skills for clinical improvisation. Furthermore, *Improvising in Styles: A Workbook for Music Therapists, Educators and Musicians* provides a scope of practice derived from Wigram's concept of musical frameworking, and incorporates styles of music within a similar context (Lee & Houde, 2011). Lee (2015) further elaborates on this concept, as well

as incorporating salient points and important concepts of Aesthetic Music Therapy in *International Perspectives in Music Therapy Education: Adapting to a Changing World.* Similar texts, such as *Clinical Improvisation Techniques in Music Therapy: A Guide for Students, Clinicians and Educators,* have been written by music therapists to deepen understanding of the techniques and provide new perspectives on fundamental concepts related to IMT (Carroll & Lefebvre, 2013).

In the following review we aim to synthesise the existing knowledge, map the key concepts, and explicate types of evidence (Colquhoun et al., 2014).

METHODOLOGY

This scoping review falls under the qualitative paradigm, as existing literature is collected and analysed by utilising content analysis (Ghetti & Keith, 2016). In this particular review, the framework presented by Arksey & O'Malley (2005) was utilised in the following manner: We first identified the research questions and relevant studies. Then we selected those studies that met the certain criteria. After this we gathered and documented the data according to our research questions, and finally we summarised and reported the results. This scoping review also has an interpretivist nature, as it explores different clinical improvisation techniques that have been used in autism research and their alignment to Bruscia's taxonomy of 64 clinical techniques for IMT (Wheeler & Bruscia, 2016).

Data collection

A literature screening was completed to determine the most commonly used techniques in autism and IMT research. To be selected, the articles had to meet the following criteria:

a) A research study that employs improvisational music therapy with clients with autism.

b) The study either names the IMT techniques used or includes a description of the improvisational music therapy employed.

c) The study is published in a peer-reviewed journal, in English language.

Based on these criteria, we gathered data by systematically searching databases relevant to current music therapy research. These databases included Primo, Cochrane Library, Oxford Academic, Scholars Portal Journals, Medline, Cinahl, and PsycINFO. The journals we searched included: *British Journal of Music Therapy, Music & Medicine, Journal of Music Therapy, Music Therapy Perspectives, Journal of the American Medical Association, Autism, Nordic Journal of Music Therapy, Voices,* and *Approaches: An Interdisciplinary Journal of Music Therapy*. We used the following keywords: Improv* music therapy, music therapy auti*, IMT autism, music therapy AND autism, music therapy autism AND experiment, music therapy autism case study, music therapy autism research.

The following eight articles met the inclusion criteria and were chosen to be included into this scoping review:

Source	Title	Type of research
Geretsegger et al. (2014). *Cochrane Database of Systematic Reviews*	Music therapy for people with autism spectrum disorder (review)	• Literature (systematic) review
Bieleninik et al. (2017). *The Journal of the American Medical Association*	Effects of improvisational music therapy vs enhanced standard care on symptom severity among children with autism spectrum disorder	• Assessor-blinded randomised controlled trial
Knapik-Szweda, S. (2015). *Journal of Education Culture and Society*	The effectiveness and influence of vocal and instrumental improvisation in music therapy on children diagnosed with autism	• Qualitative study, experimental • Two case vignettes included in results
Vaiouli et al. (2015). *Autism*	"Bill is now singing": Joint engagement and the emergence of social communication of three young children with autism	• Mixed methods research ○ Quantitative methods included measuring outcomes in 10-second intervals ○ Qualitative methods included semi-structured informal interviews with the children's circle of care • Complementary qualitative analysis
Ghasemtabar et al. (2015). *Advanced Biomedical Research*	Music therapy: An effective approach in improving social skills of children with autism	• Clinical trial, experimental
Geretsegger et al. (2015). *Journal of Music Therapy*	Common characteristics of improvisational approaches in music therapy for children with autism spectrum disorder: Developing treatment guidelines	• Qualitative research • Survey format
Banks, S. (1982). *Music Educators Journal*	Orff-Schulwerk teaches musical responsiveness	• Qualitative • Descriptive, instructional
Schumacher, K. (2013). *Approaches: An Interdisciplinary Journal of Music Therapy*	The importance of Orff-Schulwerk for musical social-integrative pedagogy and music therapy	• Historical review

Table 1: List of eight articles selected for literature screening

Data analysis and interpretation

The qualitative content analysis (Ghetti & Keith, 2016) was utilised when analysing and interpreting the text and its meanings.

The chosen research articles relating to autism and IMT were screened for the clinical improvisation techniques utilised. In order to answer our first research question, "What clinical improvisation techniques are primarily used in autism research?", we first reviewed which clinical techniques were implemented in each study. Then we revisited the literature and checked which researchers had used the techniques.

The IMT technique utilised	Frequency
Imitating	Direct: Geretsegger et al. (2015); Knapik-Szweda (2015) Indirect: Geretsegger et al. (2015); Vaiouli et al. (2015)
Reflecting	Direct: Geretsegger et al. (2014); Geretsegger et al. (2015) Indirect: Nordoff & Robbins (2007); Markworth (2014); Knapik-Szweda (2015)
Synchronising	Direct: Bieleninik et al. (2017) Indirect: None
Extending	Direct: Vaiouli et al. (2015) Indirect: Geretsegger et al. (2014)
Symbolising	Direct: None Indirect: Banks (1982); Schumacher (2013)
Holding	Direct: Geretsegger et al. (2014) Indirect: Knapik-Szweda (2015)
Incorporating	Direct: None Indirect: Vaiouli et al. (2015)
Rhythmic Grounding	Direct: Geretsegger et al. (2015) Indirect: Bieleninik et al. (2017)

Table 2: Top eight IMT techniques utilised with autistic clients.

In order to answer our second research question, "How are these techniques defined in comparison to Bruscia's taxonomy?", we conducted an additional qualitative and interpretative analysis by literally comparing the descriptions provided by the different authors with Bruscia's definitions. From this, we determined the eight most commonly utilised techniques and their associated sources.

In some cases, the specific techniques employed were not named at all. In those cases we compared the authors' descriptions to Bruscia's definitions, and if they aligned, we included them by renaming them according to the IMT taxonomy. If descriptions given for the included techniques did not align with Bruscia's definition, we simply excluded them.

The researchers collaboratively interpreted and analysed the data by coding it for the meaning units and labelling for the categories. The obvious components such as named IMT techniques were coded first. If the technique was not named according to Bruscia's taxonomy, the researchers used their collaborative best judgment to determine these meaning units based on the authors' descriptions of the particular techniques.

AUTISM LITERATURE SCREENING RESULTS

The following techniques were determined as the most commonly referenced in the included articles: *imitation, reflection, synchronisation, extending, symbolising, holding, incorporating,* and *rhythmic grounding*. In the text that follows, each technique and the corresponding articles that noted it will be reviewed.

Technique #1: Imitating

The clinical technique referenced most frequently in the selected articles is imitating. As noted in Bruscia's *Improvisational Models of Music Therapy* (1987), imitating is defined as "echoing or reproducing a client's response, after the response has been completed" (p. 535). Imitating is a technique of empathy that seeks to promote client self-awareness and build the therapeutic relationship. Its clinical aims include focusing the client's attention on their own actions, reinforcing the client's relevant actions and communications, conveying leadership and acceptance of the client and their improvisations, establishing turn-taking and modelling imitative behaviour (Bruscia, 1987, p. 538).

Imitation is directly mentioned as an improvisation technique in Geretsegger et al.'s (2015) "Common Characteristics of Improvisational Approaches in Music Therapy for Children With Autism Spectrum Disorder: Developing Treatment Guidelines", as well as in "The Effectiveness and Influence of Vocal and Instrumental Improvisation in Music Therapy on Children Diagnosed With Autism" (Knapik-Szweda, 2015). Geretsegger et al. (2015, p. 271) state that "improvisational techniques may involve imitation", further elaborating that "the therapist may communicate that s/he is also aware of the child's playing by imitating, exaggerating, and augmenting the child's musical utterances" (p. 272). Furthermore, Knapik-Szweda directly refers to the "therapist imitating each subject's musical material, movements and mood" (2015, p. 155), all appearing to match the terminology put forth by Bruscia.

In Vaiouli, Grimmet, and Ruich's article "Bill Is Now Singing", the methodology alludes to the use of imitation, but it is not directly mentioned. They explain the technique by describing that the therapist "engaged in call-and-response music interactions" (Vaiouli et al., 2015, p. 79), with the term 'call-and-response' potentially aligning with Bruscia's definition of imitation. Vaiouli et al. (2015) also provide their clinical aims for the use of these musical interactions, explaining that it creates "opportunities for the child to explore musical instruments, take initiatives, and be creative and playful" (p. 79). As mentioned previously, Bruscia describes bringing the client's attention to their own actions, promoting client leadership and establishing interactions through turn-taking as some of the aims of imitation. The call-and-response music interactions and related aims that Vaiouli et al. describe align with Bruscia's description and aims in some ways. It is important to differentiate whether or not the client's response was a direct imitation. For example, the call could be phrase one, and the response phrase two – i.e. musically compatible but not imitative. This demonstrates that a specific set of parameters that specify what musical elements are being imitated (i.e. if the client's rhythms are being imitated but not their melody, or if the client's musical phrase in its entirety is being imitated) is imperative to ensuring proper explanation and implementation of the clinical technique in music therapy research.

Technique #2: Reflecting

Reflection is defined by Bruscia (1987, p. 539) as, "matching the moods, attitudes, and feelings exhibited by the client". Just like imitation, it is classified as a "technique of empathy" that may involve musical, lyric, verbal, or movement reflection depending on aims and objectives for the client.

Musical reflection may also include improvising a musical expression of the client's personality. This technique may be used to establish rapport and build relationship, by demonstrating the therapist's acceptance of the client musically. In addition, the client may achieve a greater sense of emotional self-awareness through experiencing their musical reflection (Bruscia, 1987).

When describing the "Unique and Essential Principles Within IMT for Children With ASD", Geretsegger et al. (2015) convey the necessity of facilitating attunement with the child, both musically and emotionally. The article does not directly mention the use of reflection as an improvisational technique, but rather describes the ways in which therapists can work towards attunement through music, which closely align with Bruscia's definition: "The music played or sung by the therapist is closely attuned to the child's immediate display of (musical or other) behaviour, focus of attention, and/or emotional expression" (Geretsegger et al., 2014, p. 271). The authors articulate similar goals in using this technique, such as promoting self-awareness and building the therapeutic relationship.

Reflecting also aligns closely with the concept of meeting and matching, which is pivotal to the Nordoff-Robbins model of music therapy. According to Nordoff and Robbins (2007, p. 209), when the therapist creates music that matches the client's non-verbal, verbal, or musical expression, it conveys acceptance and the willingness to meet the client in their current experience. Although Nordoff and Robbins did not use the term "reflecting" to describe meeting and matching, Bruscia (1987) drew this parallel in *Improvisational Models of Music Therapy.* Multiple articles referenced meeting and matching, including Knapik-Szweda's (2015) study published in the *Journal of Education Culture and* Society, and Markworth's (2014) "Without Words: Music as Communication for Children With Autism".

Technique #3: Synchronising

The third most commonly referenced clinical improvisation technique as determined by the literature review is synchronising. Like imitating and reflecting, synchronising is a technique of empathy that seeks to promote client self-awareness and build the therapeutic relationship. Bruscia (1987, p. 535) defines synchronising as "doing what the client is doing at the same time". Bruscia also described the technique of mirroring as 'synchronising – doing what the client is doing at the same time' (Wigram, 2004, p. 82)

Synchronising may occur with different elements of the music and with varied levels of precision, depending on the therapist's aims and objectives. For example, the therapist may respond to certain elements, such as the rhythms, melodies, or lyrics. The synchronisation becomes more complex, with multiple dimensions, as the intent is to produce the same musical elements at the same time as the client. The technique's use may also involve the therapist mirroring the client's posture, actions, and/or behaviours (Bruscia, 1987). Geretsegger et al. (2015) also mention the use of mirroring in improvisational music therapy with children with autism, which could be analogous to imitating. The article does not, however, expand on the nature of the music-making while using mirroring, so this connection is unclear.

Synchronisation was also mentioned in Bieleninik et al.'s (2017) study. Specifically, the "therapists developed joint musical activities (singing or instrumental play) individually with each

child, based on the child's focus of attention, using improvisation techniques such as synchronizing, mirroring, or grounding" (Bieleninik et al., 2017, p. 527). In this study, synchronisation was used to promote the development of social competencies such as affect sharing and joint attention.

Technique #4: Extending

The fourth technique we uncovered is extending. Bruscia categorises extending as an elicitation technique, aimed at lengthening the client's phrasing. He states: "This may be accomplished by adding sounds to the end of the phrase, or by adding an overlapping phrase to the client's" (Bruscia, 1987, p. 544). Extending may be used to encourage further playing, increase musical continuity, and aid the client in expressing a complete musical idea.

While Vaiouli et al. (2015) do not directly mention extending, aspects of their improvisation description align closely with Bruscia's definition of extending. The authors state: "A child-led component was designed to strengthen each child's ability for sharing intentions and initiating joint engagement episodes. For that purpose, the researcher expanded on each child's music-making actions" (Vaiouli et al., 2015, p. 78). The description continues, "the researcher provided musical structure by adding melodic, harmonic, and/or rhythmical variations to the child's music choices" (p. 79). In both quotes, the authors describe a musical interaction in which the researcher expands or adds to the child's music-making, which strongly implicates the use of extending despite not using the specific terminology. The clinical rationale for the use of this technique, was to encourage joint music-making and interaction within the music, as well as to enrich the musical experience for the child (Vaiouli et al., 2015). It is again important to note that techniques are rarely used in isolation when considering the mention of providing musical structure in the latter description.

Geretsegger et al. (2014, p. 271) mention the use of elaboration while describing the common improvisational techniques employed with children with autism. Based on a description of the clinical music-making, it is likely that elaboration is akin to Bruscia's extending. The description is as follows: "If the child displays signs of newly emerging communicative skills, the therapist gently reinforces them and expands on them in a playful and encouraging way […] the therapist may communicate by imitating, exaggerating, and augmenting the child's musical utterances" (Geretsegger et al., 2014, p. 272). The aim of extending within the context of the paper is to "scaffold the flow of interaction musically" (Geretsegger et al., 2014, p. 271).

Technique #5: Symbolising

The fifth most often cited clinical technique is symbolising. Symbolising is defined as "having the client use something musical (instrument, motif, etc.) to stand for or represent something else (e.g. an event or person)" (Bruscia, 1987, p. 536). Within a session, symbolising can be used to explore a non-musical entity in a musical context and give the client the ability to project feelings onto these non-musical entities (Bruscia, 1987).

Symbolising is not directly referenced in any major publications, though it is alluded to in Ghasemtabar et al.'s (2015) article describing the use of Orff-Schulwerk improvisation techniques within a music therapy session. The authors explain that the "Orff method puts emphasis on

nonverbal elements of music" (Ghasemtabar et al., 2015, p. 6), alluding to the ability to project feelings onto non-musical entities described by Bruscia. The use of improvisational techniques derived from the Orff-Schulwerk model is also found in Schumacher's article "The Importance of Orff-Schulwerk for Musical Social-Integrative Pedagogy and Music Therapy". Schumacher (2013, p. 115) writes that "it is not the playing from notation but the free making improvisation that is meant and demanded, for which the printed examples give information and stimulus".

Clinical aims for the use of symbolisation are also found in Ghasemtabar et al.'s (2015) article, and in Banks' (1982) "Orff-Schulwerk Teaches Musical Responsiveness". Ghasemtabar et al. (2015, p. 6) describe the implementation of symbolisation "to improve poor nonverbal behaviors of the children with autism and lead to enhancement of their social skills". Banks elaborates by saying that the children gain:

> [Motivation] to participate in more aesthetic events, and, through these experiences, they also learn music concepts and build music skills. They synthesize and internalize these concepts and skills through improvisation and use them in more complex and significant music experiences. This cycle produces self-actualizing people who seek out music and respond deeply to it. (Banks, 1982, p. 43)

In a therapeutic context, the information and stimulus noted in Banks' article appear to relate to the exploration of non-musical entities in Bruscia's definition of symbolising, where the free making improvisation appears to relate to the use of symbolising itself.

Schumacher (2013) also argues that in implementing symbolisation into improvisation, "the child should express himself freely, give form to his expression and use it in social relationships" (p. 114), thus suggesting that symbolisation can be used as a technique to enhance social interaction as well as connection within a group.

Technique #6: Holding

In Bruscia's taxonomy of 64 clinical improvisation techniques, there are nine categories including "techniques of emotional exploration". Holding, the sixth technique uncovered in our literature review, falls into this category. Specifically, "as the client improvises, the therapist provides a musical background that resonates the client's feelings while containing them" (Bruscia, 1987, p. 552). The quality of the music is usually 'anchoring'; e.g. the use of harmonic accompaniments that incorporate rhythmic or tonal grounding techniques (such as a series of slow, sustained octaves). Since holding involves both reverberating the client's feelings and containing them, it involves a combination of multiple other techniques including reflecting, pacing, grounding, and centring. These may be used at different times during the improvisation, depending on the client's emotional needs. It is also important to note that the therapist follows the client and does not attempt to elicit emotions that the client may be suppressing; instead they remain in the musical background and provide a musical container for the client (Bruscia, 1987). The use of holding in

clinical improvisation encourages the safe and full expression of emotions for the client, which has the potential to lead to further therapeutic insights.

The use of holding as a clinical improvisation technique is articulated in multiple research studies with individuals with autism. In "Common Characteristics of Improvisational Approaches in Music Therapy for Children With Autism Spectrum Disorder", Geretsegger et al. (2015) conclude that facilitating musical and emotional attunement is an essential principle for effective IMT with children with ASD. They describe the purpose of this principle as follows: "[To] increase opportunities for awareness of self, shared attention, social reciprocity, and relationship building" (Geretsegger et al., 2014, p. 268). The article lists holding as an example of a technique that can be used to accomplish musical and emotional attunement. Considering the purpose of holding mentioned above, it appears to align with Bruscia's definition. It is important to note that the definition of holding was not directly outlined; the researchers extrapolating the definition based on the context and purpose. In this context, it appears the authors' definition of holding aligns strongly with Bruscia's.

Mentioned previously, Knapik-Szweda's (2015) study examines the influence of improvisational music therapy with children diagnosed with autism. In the methods section, the author states that the improvisations were informed by both the Nordoff-Robbins (1977) Creative Music Therapy model and Tony Wigram's (2004) improvisational techniques. The article describes four specific techniques in the following passage:

> Therapist imitating each subject's musical material, movements and mood; dialogues – a process where therapist and child/children communicate through their musical play; holding – where therapist is providing a rhythmic or tonal foundation for the subject's own improvisation; and frameworking - where the therapist provides a functional and consistent musical structure within which the child's musical play fits. (Knapik-Szweda, 2015, p. 155)

This definition of holding differs slightly from Bruscia's in that it does not seek to reverberate the emotional content in addition to containing it. Based on the context and information given in the article, the use of holding in this study may be an example of the researcher's label misaligning with Bruscia's definition of the technique. However, it is well aligned with Wigram's interpretation.

Technique #7: Incorporating

Incorporating is the seventh clinical technique explored in this study. Incorporating is defined as "using a musical motif or behaviour of the client as a theme for one's own improvising or composing, and elaborating it" (Bruscia, 1987, p. 535). Incorporating can be used to provide positive reinforcement of a client's musical motif, display an acceptance of a client's music, and to model musical creativity and expression; and it provides various ways of working through a musical feeling. Incorporating also helps build a musical repertoire between a therapist and a client (Bruscia, 1987).

While incorporating is not directly referenced in the selected research literature, it appears to be referenced indirectly by Vaiouli et al. (2015). They explain one of the intervention techniques as elaborating, where "the researcher provided musical structure by adding melodic, harmonic, and/or

rhythmical variations to the child's music choices" (Vaiouli et al., 2015, p. 79). This technique appears to be included in the session based on the child's behaviours and preferences, lining up with Bruscia's definition of elaborating on a client's behaviour.

Clinical aims for the use of incorporation are also found in Vaiouli et al.'s (2015) article. The use of incorporating is rationalised as a way to "invite the child's response and create a shared musical context for joint engagement" (p. 79). Inviting a child's response through music aligns with Bruscia's (1987) clinical aim to both accept a client's music and to reinforce the presentation of a musical motif; and creating shared musical context aligns with the clinical aim to build a repertoire between the therapist and the client, and to eventually build rapport to work through musical feelings that present themselves during sessions.

Technique #8: Rhythmic grounding

The final improvisation technique identified in this review is rhythmic grounding, which is defined as "keeping a basic beat or providing a rhythmic foundation for the client's improvising" (Bruscia, 1987, p. 541). Its clinical aims strictly revolve around maintaining tempo, pulse and meter, as it is not intended to meet and match the emotional intensity of the client.

Rhythmic grounding is directly referenced as an improvisation technique in Geretsegger et al.'s "Common Characteristics of Improvisational Approaches in Music Therapy for Children With Autism Spectrum Disorder: Developing Treatment Guidelines" (2015). They state that "IMT techniques for musically scaffolding interventions include rhythmic grounding by providing a rhythmic foundation for the child's musical behavior" (p. 272). The use of the term rhythmic foundation in Geretsegger et al.'s article matches Bruscia's terms used in his definition of the technique.

While rhythmic grounding is not directly referenced in Bieleninik et al.'s 2017 article, they do mention "grounding" (p. 527), though it is unclear whether this definition is meant to reflect Bruscia's definition of rhythmic grounding. Bieleninik et al. (2017) explain that "these activities aimed to develop and enhance affect sharing and joint attention, which are associated with development of social competencies" (p. 527), which can be maintained through pulse and meter maintenance defined in Bruscia's clinical aims.

DISCUSSION

When conducting the literature screening, we noted a general lack of detail when describing the improvisational techniques utilised within the research. In some literature, virtually no description was given beyond noting the use of improvisational music therapy, and there were no descriptions of how the music was employed by client and therapist. In the majority of studies, the techniques were briefly referenced or extrapolated from descriptions given. In some cases, the descriptions given for the included techniques did not align with Bruscia's definition. This is to be expected to a certain extent, as the practice of music therapy has evolved over time and Bruscia's work has been built upon. Naturally, we should also acknowledge that processes change over time. For example, Wigram

and others have built on Bruscia's work, and Bruscia himself might write about things differently now.

Beyond the practical difficulty of determining the specific techniques, a lack of clarity relating to naming and defining the techniques resulted in considerable ambiguity in determining the nature of improvisational music therapy provided to clients. It is likely that the inconsistent definitions for techniques and mislabelling relate to a lack of understanding, resulting in difficulty labelling the technique. It is possible that this ties back to differences in training and education, as there are a number of training texts for improvisational music therapy teaching varied content; individual preferences influence which texts and techniques are taught and individual differences influence how they are perceived. For example, meeting and matching are common terms associated with Nordoff-Robbins (1977) music therapy, and are not included in Bruscia's 64 clinical techniques. There is also evidence of new terms being coined to better describe the exact technique being used; although the intent of this is likely to increase clarity and better describe the therapeutic process, this may increase confusion for readers who are unfamiliar with the new terms being coined.

To address this issue, it is recommended that the music therapy community develop and utilise a universally understood terminology relating to clinical improvisation. This does not remove the fact that people will continue to practise and talk about their practice in various ways. However, although we cannot always hold on to historical practices, we do need to describe what we are doing now, clearly, and in the context of what has gone before.

In the interim, it will be important to elaborate upon the guidelines set forth by Ghasemtanar et al. (2015) and Geretsegger et al. (2015) to ensure that techniques are properly labelled and described in the event that there is a discrepancy in the technique used and its implementation in a research context. This will allow for more consistent knowledge and application of the techniques for all music therapists working in a clinical setting and, ultimately, higher-quality practice as we move closer to successfully implementing standardised clinical improvisation terminology. As mentioned previously, Bruscia's taxonomy could be used as an existing framework to standardise clinical improvisation terminology, as the techniques included are extensive and thoroughly described.

The results of this literature screening determined the eight most commonly used clinical improvisation techniques with clients with autism in current peer-reviewed music therapy research. The researchers employed multiple keywords, databases and the understanding of multiple theories to ensure credibility of the research. Findings point to a lack of continuity in the literature regarding definitions of the techniques, as well as for what clinical purpose they were used. Articles employing a variety of research methods were referenced, however, there were few articles that fulfilled the researcher's search criteria that also offered descriptions of the techniques used. From this exploration, it appears that terminology relating to clinical improvisation is not universally understood or applied. A universal understanding of the terms is needed to maintain consistency when using the techniques for more effective clinical work and clearer methodologies in future research studies. Further research that builds on the results of this study and seeks to address the aforementioned gap, can provide a deeper understanding of the definition, application, and use of clinical improvisation techniques. We anticipate this research will ultimately help music therapists successfully incorporate these techniques into their clinical practice with autistic clients.

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Ελληνική περίληψη | Greek abstract

Οι κλινικές τεχνικές του Bruscia για την αυτοσχεδιαστική μουσικοθεραπεία στην έρευνα για τον αυτισμό: Μια οριοθετημένη ανασκόπηση

Kathleen Skinner | Ashley Kurkjian | Heidi Ahonen

ΠΕΡΙΛΗΨΗ

Η παρούσα οριοθετημένη ανασκόπηση διερευνά τις τεχνικές κλινικού αυτοσχεδιασμού του Bruscia (1987) στην αυτοσχεδιαστική μουσικοθεραπεία όπως αυτές σχετίζονται με την έρευνα της μουσικοθεραπείας στον αυτισμό, με στόχο να προσδιορίσει τις κλινικές μεθόδους που χρησιμοποιούνται πιο συχνά στη μουσικοθεραπεία με άτομα με αυτισμό. Η μελέτη ξεκίνησε ως ένα προκαταρκτικό βήμα σε μία πιλοτική έρευνα που εξετάζει τους τρόπους με τους οποίους οι τεχνικές αυτές αφορούν τους διαφορετικούς τρόπους παιξίματος, των μουσικών σχέσεων και το πώς η χρήση τους επιδρά στην εμπειρία του συμμετέχοντα ως προς τη μουσική του διασύνδεση, επιρροή και έκφραση. Τα άρθρα που συμπεριελήφθησαν στην ανασκόπηση, σύμφωνα με τα κριτήρια επιλογής, έπρεπε να αφορούν την αυτοσχεδιαστική μουσικοθεραπεία με άτομα με αυτισμό όπου συγκεκριμένες τεχνικές είτε να αναφέρονται με σαφήνεια ή να περιγράφονται με λεπτομέρεια. Επιπρόσθετα, όλα τα άρθρα έπρεπε να έχουν δημοσιευτεί σε περιοδικά που ακολουθούν τη διαδικασία ομότιμης αξιολόγησης. Ακολουθώντας ποιοτική θεματική ανάλυση, οι συνηθέστερες τεχνικές κλινικού αυτοσχεδιασμού που χρησιμοποιούνται με άτομα με αυτισμό είναι οι εξής: μίμηση [imitating], αντανάκλαση [reflecting], επέκταση [extending], συγχρονισμός [synchronizing], συμβολισμός [symbolizing], κράτημα [holding], ενσωμάτωση [incorporating] και ρυθμική γείωση [rhythmic grounding]

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

αυτισμός, τεχνικές κλινικού αυτοσχεδιασμού του Bruscia, αυτοσχεδιασμός, μουσικοθεραπεία

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ARTICLE

Using music-adapted technology to explore Bruscia's clinical techniques introduced in autism research: Pilot study

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ABSTRACT

This pilot research investigated eight most commonly used Bruscia's (1987) clinical improvisation techniques utilised in music therapy with autistic clients: imitating, reflecting, synchronising, extending, symbolising, holding, incorporating, and rhythmic grounding (Skinner, Kurkjian & Ahonen, 2020). The techniques were explored with research participants (music students), by isolating and implementing each technique in eight short improvisations. Improvisations were recorded using LogicPro connected to MalletKAT instruments. Improvisations were analysed using music-adapted technology, the MIDI Toolbox designed for MATLAB, a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks, and the Music Therapy Toolbox (MTTB) (Erkkilä, Lartillot, Luck, Riikkila & Toiviainen, 2004). In addition, participants provided their subjective experience of each improvisation in a questionnaire format. The research questions included: 1) How will Bruscia's eight fundamental clinical improvisation techniques be represented in MATLAB/MTTB in terms of both individual ways of playing and musical relationships? 2) How will the use of each isolated improvisation technique impact the participant's experience of musical connection, influence, and expression? Through the combination of musical analysis and qualitative thematic analysis, insights relating to the effective implementation and purposeful use of imitation, synchronisation, holding, and rhythmic grounding were realised. The musical data generated from MATLAB/MTTB demonstrated how researchers implemented the techniques and trends in the participant's playing. In addition, the questionnaires provided insights into how each technique influenced the participant's ability to express and connect, as well as their perception of the researchers' musical influence. These results may be used to inform both music therapists and future related research.

KEYWORDS

autism,
Bruscia's clinical improvisational techniques,
improvisation,
music therapy

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INTRODUCTION

To date, the majority of music therapy research with autistic clients has sought to demonstrate efficacy of musical interventions and deepen understanding by examining the practice of music therapy. Very little research has extrapolated and experimented with the individual elements of therapy, such as varying clinical improvisation techniques, and their characteristics. Furthermore, music therapy research with autistic clients rarely focuses on isolating and examining clinical improvisational techniques in an experimental setting. Practically, this may result in unclear definitions of the techniques, as well as discrepancies in how they are used and identified both in research and clinical work (Skinner, Kurkjian & Ahonen, 2020).

This pilot study explored, in an experimental setting, how some of the most commonly utilised improvisational techniques can be represented in terms of individual ways of playing, musical relationships; and how the use of the techniques impacts the participant's experience of musical connection, influence, and expression. The study was conducted with Bachelor of Music students as participants. In the future, it is our intention to duplicate the research with autistic clients. We chose not to recruit autistic participants as we first wanted to investigate whether it is possible to explore and analyse the certain elements of improvisation experience with the Music Therapy Tool Box (MTTB) (Erkkilä, Lartillot, Luck, Riikkila & Toiviainen, 2004).

LITERATURE REVIEW

In *Improvisational Models of Music Therapy*, Bruscia introduced a taxonomy of 64 clinical techniques he believed to be fundamental to improvisational music therapy (Bruscia, 1987, pp. 533-557). Bruscia developed this taxonomy in an attempt to create consistent vocabulary to be used in all models of clinical improvisation, translating to increased clarity in music therapy practice and literature. The techniques are named and categorised based on the focus, clinical objectives, and mode of implementation. The categories are as follows: techniques of empathy, structuring, intimacy, elicitation, redirection, procedural, emotional exploration, referential, and discussion techniques (Bruscia, 1987, p. 535)[1].

Skinner et al.'s (2020) scoping review explored Bruscia's (1987) clinical techniques for improvisational music therapy as they relate to music therapy in autism research to determine the most commonly used clinical techniques in music therapy with clients with autism. To be included in the review, the research articles had to employ improvisational music therapy with clients with

[1] A complete listing and description of the 64 techniques can be found in Chapter 37 of *Improvisational Models of Music Therapy* (Bruscia, 1987).

autism, and articles either had to label techniques used or provide a clear description of techniques used. In addition, it was required that articles were published in a peer-reviewed journal. Eight articles were chosen, including: Geretsegger, Elefant, Mossler and Gold (2014), Geretsegger, Holck, Carpente, Elefant and Kim, (2015), Bieleninik et al. (2017), Knapik-Szweda (2015), Vaiouli, Grimmett, and Ruich, (2015), Ghasemtabar et al. (2015), Banks (1982), and Schumacher (2013). Based on the thematic analysis, the current most commonly used clinical improvisation techniques with autistic clients are as follows: imitating, reflecting, synchronising, extending, symbolising, holding, incorporating, and rhythmic grounding.[2] We noted differences in the definition and application of Bruscia's techniques in research with new terms and definitions being coined in an attempt to describe the technique being utilised. This may be because different therapists and researchers may be informed by different theoretical frameworks and cultural contexts, and therefore both understand and implement the improvisation descriptions differently. In this study, these eight improvisation techniques are further explored in an experimental setting.

Integrative Improvisational Music Therapy, the clinical intervention utilised in this study, was first noted in 2011 (Erkkilä et al., 2011). The defining component of this intervention style is that "the improvisations created in the sessions were recorded either as MIDI-data or as digital audio", making it possible to "play back the improvisations for further processing and discussion" (Erkkilä et al., 2011, p. 134). Erkkilä et al. aimed to determine whether incorporating music therapy (using improvisations on MIDI-controlled mallet instruments and an acoustic djembe) into standard care for clients with depression would be effective in their recovery journey. The same intervention technique was also used in Brabant, Solati, Letule, Liarmakopoulou and Erkkilä's study "Favouring emotional processing in improvisational music therapy through resonance frequency breathing: A single-case experimental study with a healthy client" (2017), during which the improvisations were also done on MalletKAT instruments and recorded into Logic Pro both to be exported into statistical software and for the ability to listen back to the improvisations for further exploration.

RESEARCH QUESTIONS

This study sought to address the gap in experimental studies relating to clinical improvisation techniques, and to explore Bruscia's clinical techniques from a new perspective. In this pilot research, each of the eight techniques determined to be relevant to music therapy work with people who have autism (Skinner et al., 2020), *imitating, reflecting, synchronising, extending, holding, incorporating, and rhythmic grounding*, were explored with music student participants utilising music-adapted technology and analysed with specialised software to generate insights into their use, implementation and related outcomes.

The research questions were as follows: 1) How will Bruscia's eight fundamental clinical improvisation techniques (imitating, reflecting, synchronising, extending, holding, incorporating, and rhythmic grounding) be represented in MATLAB/MTTB in terms of both individual ways of playing and musical relationships? 2) How will the use of each isolated improvisation technique impact the participant's experience of musical connection, influence, and expression?

[2] The eight different techniques have been defined and further described in Skinner et al. (2020).

According to Geretsegger et al. (2015, pp. 270-271), the elements of musical connection, musical influence and emotional expression are crucial "moments of musical attunement that may develop into affective and emotional attunement and emotional sharing" when working with clients with autism. This is why these elements were chosen for the second question.

Research methodology

This explorative study combines musical microanalysis (Wosch, Trondalen & Erkkilä, 2016) with qualitative thematic analysis (Braun & Clark, 2006). The data was collected in an experimental setting in the Manfred and Penny Conrad Institute for Music Therapy Research (CIMTR) Improvisation Laboratory at Wilfrid Laurier University (WLU) by utilising MalletKAT MIDI instruments which resemble a digital marimba. The microanalysis section was conducted by utilising Logic Pro, the MIDI Toolbox designed for MATLAB, a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks, as well as the Music Therapy Toolbox (MTTB) (Erkkilä et al., 2004). There was a total of five research participants (Bachelor of Music students, three males, two females). None of the participants had any prior experience with the MalletKATs.

Each research participant took part in two separate improvisation sets, each lasting approximately 1.5 hours and consisting of eight short (2-4 minutes) improvisations. Researchers implemented one clinical technique per improvisation. Two participants improvised with Researcher One (R1) in their first session, and with Researcher Two (R2) in their second session. Three participants improvised R2 in their first session, and two with R1 in their second session.[3] After each individual improvisation, the participants answered a few questions related to that particular improvisation experience.[4]

Research setting

The MalletKAT instruments were arranged across from each other and the research participants were given two mallets before each improvisation. The randomly selected order of improvisations that took place with each participant during both of the improvisation sessions was: 1) imitation, 2) reflecting, 3) synchronising, 4) extending, 5) symbolising, 6) holding, 7) incorporating, and 8) rhythmic grounding. The participants were asked to play the MalletKAT with the researcher but were not given any instruction prior to beginning on how to play them. They were asked to improvise freely, with no planned musical structure. Participants were also asked to begin the improvisation, and once the participant began, the researcher joined them on a separate MalletKAT. The only exception to this was before the "symbolising" improvisation. In that improvisation, participants were asked to select

[3] Because the participants experienced the same procedures in both sessions, there could be test-retest bias influencing musical and survey responses. The decision to balance the number of participants starting with each researcher was made in order to better analyse individual differences in the researcher's implementation of techniques. Any trends found in differences between each participant's sessions can be more confidently attributed to researcher differences as opposed to bias from already having participated in experimental conditions once.

[4] This study was approved by the WLU ethics board.

something they could see within the lab or through the windows to symbolise musically. In addition, participants did not know which improvisation technique the researcher would be implementing. There was a short break between each improvisation to answer the post-improvisation questions:

a) In your own words, what happened during this improvisation?
b) How did the researchers' playing influence your playing?
c) Did you feel a musical connection with the researchers? Why or why not?
d) Did you feel like you were able to effectively express yourself musically?

The questions could be answered in prose, which allowed for the participants to answer authentically without feeling the need to conform their answers to a standard question format. Participants told researchers when they had answered the questions and were ready to begin playing again.

Photograph 1 and 2: The Manfred and Penny Conrad Institute for Music Therapy Research (CIMTR) Improvisation Laboratory at Wilfrid Laurier University (WLU)

Data analysis and interpretation

The analysis and interpretation of the data included qualitative thematic analysis (Braun & Clarke, 2006) of the textual data; and micro-analysis of improvised music via MTTB in MATLAB. The qualitative written responses were analysed using NVIVO, qualitative data analysis software, to generate themes relating to the participant's subjective experience of each technique. The responses for each individual improvisation technique were first grouped together and, from this, different themes were created relating to individual ways of playing, influence of the researcher, musical expression, and musical connection. The participant's awareness of his or her own playing, musical connection, researcher influence and expression were the focus in regard to participant experience,

as they are critical components of a music therapy session with clients with autism. The qualitative thematic analysis guided the musical MIDI-data analysis, with the intention of representing both individual ways of playing and musical relationship.

The MTTB in MATLAB was used to analyse the musical data retrieved from the research sessions. To complete this data analysis, the recorded Logic files were converted into a MIDI file format and imported into MATLAB, to be analysed through the MTTB. The MTTB provided data about the density of the improvisation, mean duration, mean pitch, pitch variance, mean velocity, pulse clarity, tempo, synchronicity, synchronised tempo, tonal clarity (seen as "tonality" in MTTB), and major or minor tonalities (seen as "majorness" and "minorness" in MTTB). The toolbox utilised graphs to display this data, representing the participant and researcher's voice as different-coloured lines (with the exception of synchronicity and synchronicity of tempo, which are displayed as a single line). Furthermore, the software analysed multiple aspects of the improvisations and displayed them in graphics and visuals.

In this study, the graphs generated in the MTTB were used to generate a deeper understanding of the clinical techniques and their clinical implications, relating to the connection between a participant and researcher, and musical expression on behalf of the participant.

RESULTS

We investigated the ways that selected improvisational techniques (Bruscia, 1987) could be represented in MATLAB in terms of both individual ways of playing and musical relationships, and how the use of each isolated improvisation technique impacted the participants' experiences of musical connection, influence, and expression. The following sections will introduce the results based on each technique.

Imitating

Bruscia (1987) explains that imitation has occurred in a session when a therapist echoes a client's response. These responses were represented in the MTTB graphs as phase shifts, or a replication of participants' waveform evident in the researcher's waveform. The selection of graphs shown in Figure 1 demonstrates these phase shifts, evident in all participants' improvisations and the aforementioned parameters.

In their written responses, the participants noted a reciprocal nature to the improvisations. Participants Three and Four (P3 and P4) used the term "call-and-response", P3 used the term "mimick" and P3 used the term "duet" to describe the nature of the improvisation. Participant Two (P2) explained that boundaries were laid out by R2 when imitating the participant's playing. Overall 60% of participants suggested there was not a lot of influence on their playing, with 50% of the responses elaborating that they felt more supported than influenced by the researchers' contributions to the improvisation, once the participant realised that the researchers were playing along with them.

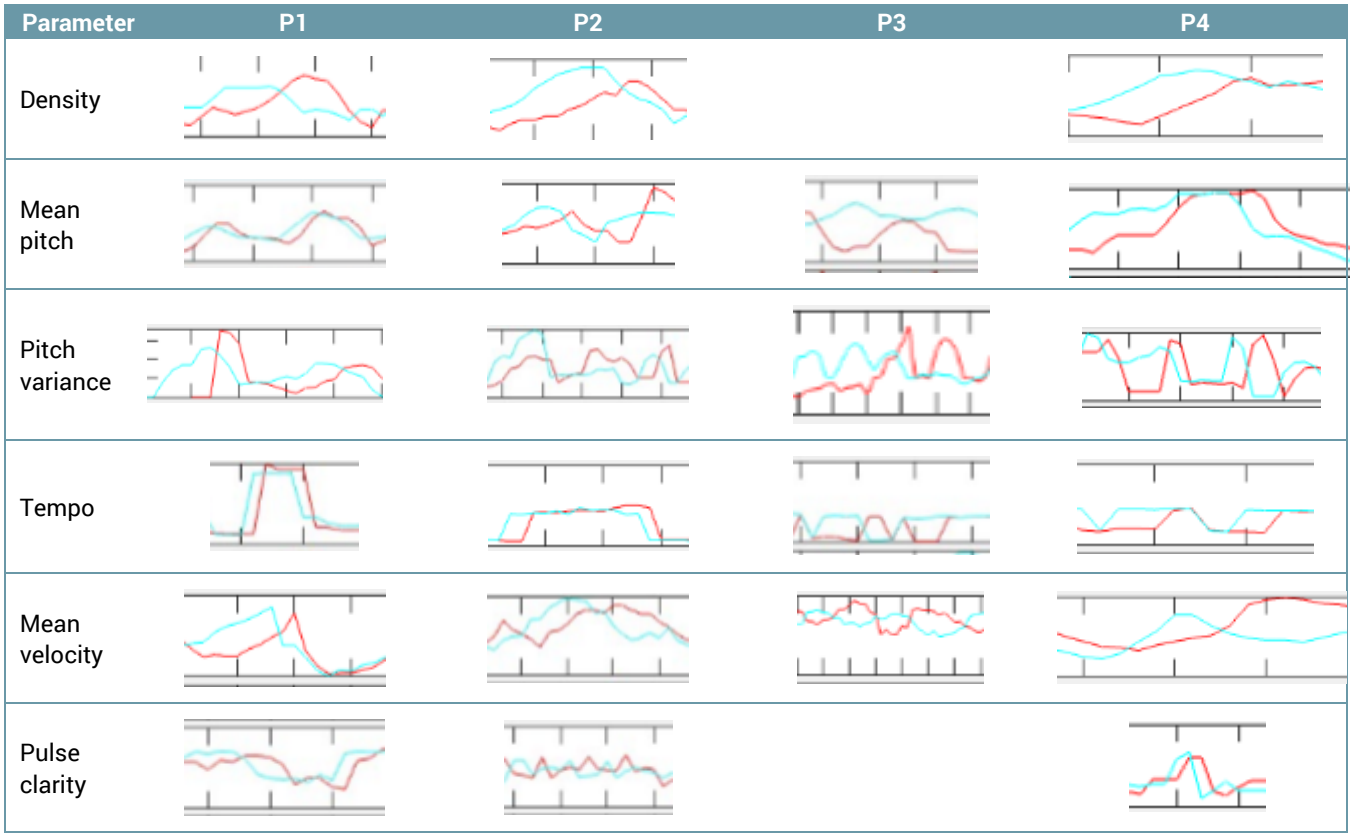

Figure 1: Evidence of imitation through phase shifts between the Researcher (red) and the Participant (blue) observed at different times throughout the participant's improvisations. The X axis indicates time and the Y axis indicates the notes played per second (density), note pitch in MIDI note numbers (mean pitch), the numerical variance between two sequential notes (pitch variance), the numerical change in note subdivision (tempo), note pitch in MIDI note numbers (mean velocity), and notes per second (pulse clarity). Imitation, as evidenced by phase shifts, was most evident in density, mean pitch, pitch variance, tempo, mean velocity and pulse clarity. Phase shifts were not as apparent in mean note duration, tonal clarity, major or minor tonalities, or synchronicity in tempo. This is likely because these parameters apply to the improvisation as a whole, rather than individual melodic or rhythmic elements of the improvisation. Phase shifts in pulse clarity and density were not evident in P3's improvisation.

Reflecting

According to Bruscia (1987, p.540) reflecting occurs when "the therapist expresses the same moods or feelings that the client is expressing". Reflecting is meant to encompass not only the client's music, but their overall presence in the session. In addition, the therapist may use movement, music, lyrics, and/or verbalisation to accomplish the reflection (Bruscia, 1987). Because of the nature of this research, it was only possible to examine the musical reflection occurring in the MTTB graphs. In almost all improvisations, the tonality of the researcher and participant were highly correlated. This is demonstrated in Figure 2.

The researcher's mean pitch was either below the participant's or synchronised. There were only brief musical moments in which the researcher's mean pitch was above that of the participant's. Beyond the trends related to mean pitch and tonality, there were few similar patterns in the MTTB graphs, especially when compared to other improvisational techniques. The few similarities in the

musical measures could relate to the inability to capture affect and emotional content, which will be explored further in discussion.

Despite few musical similarities, almost all participants indicated they were able to express themselves musically, and 70% of responses indicated a musical connection between the participant and researcher. These participants related the feelings of connection to the experience of creating the music together, as indicated by P3: "it felt like we were two parts of one piece that was being created together". Three participants also indicated they felt the most connection in this improvisation when considering the overall experience.

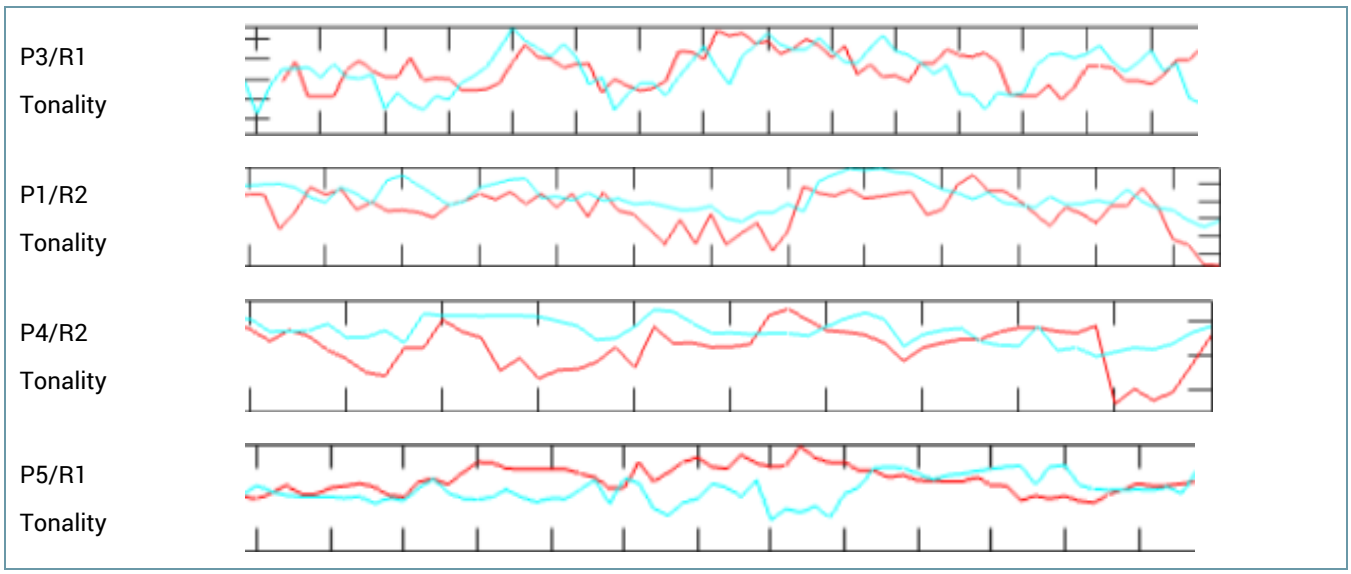

Figure 2: Graphical representation of the levels of tonality in reflecting improvisations. The X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents a tonality correlation coefficient from 0-1, with 0 being atonal and 1 being completely within a tonal structure. A high level of correlation between researcher's (red) trend and participant's (blue) trend is observed. Graphical evidence was most evident in tonality (shown above).

Synchronisation

Revisiting Bruscia's definition of synchronisation, the purpose of this technique is to promote self-awareness and develop relationship, through synchronised playing. While improvising, the researchers attempted to play what the participants were playing, at the same time. Due to the nature of the technique, the researchers were unable to replicate all elements of the student's playing; in certain parts of the improvisation, the researchers would focus on synchronising with certain elements (i.e. synchronising rhythmic patterns versus synchronising melodic patterns) or would synchronise with certain fragments of the phrase. In addition, some elements were more successfully predicted than others, leading to higher levels of synchronisation in that particular element. Finally, the researchers synchronised more successfully in some improvisations compared to others, depending on the complexity and composition of the improvisation. These findings are evident when analysing density, mean duration, mean pitch, mean velocity, pulse clarity, tempo, tonal clarity, major and minor tonality, synchronicity, and synchronised tempo in MTTB.

To generate synchronicity, the MTTB software combines the level of togetherness in both voices, for each individual element. For the software to generate 100% synchronicity, the researcher and student would have to be exactly together in all elements of the music generated. For this reason, many of the synchronicity lines vary, with erratic peaks and dips as the improvisation progressed; as mentioned previously, the researchers did not synchronise with all elements of the music, or would synchronise with fragments of the phrase, for logistical reasons.

According to the MTTB graphs, the element that was most successfully synchronised with by the researcher is density. In almost all improvisations, the researcher matched the note density of the student, within a similar timeframe, for the majority of the music. This is demonstrated in Figure 3.

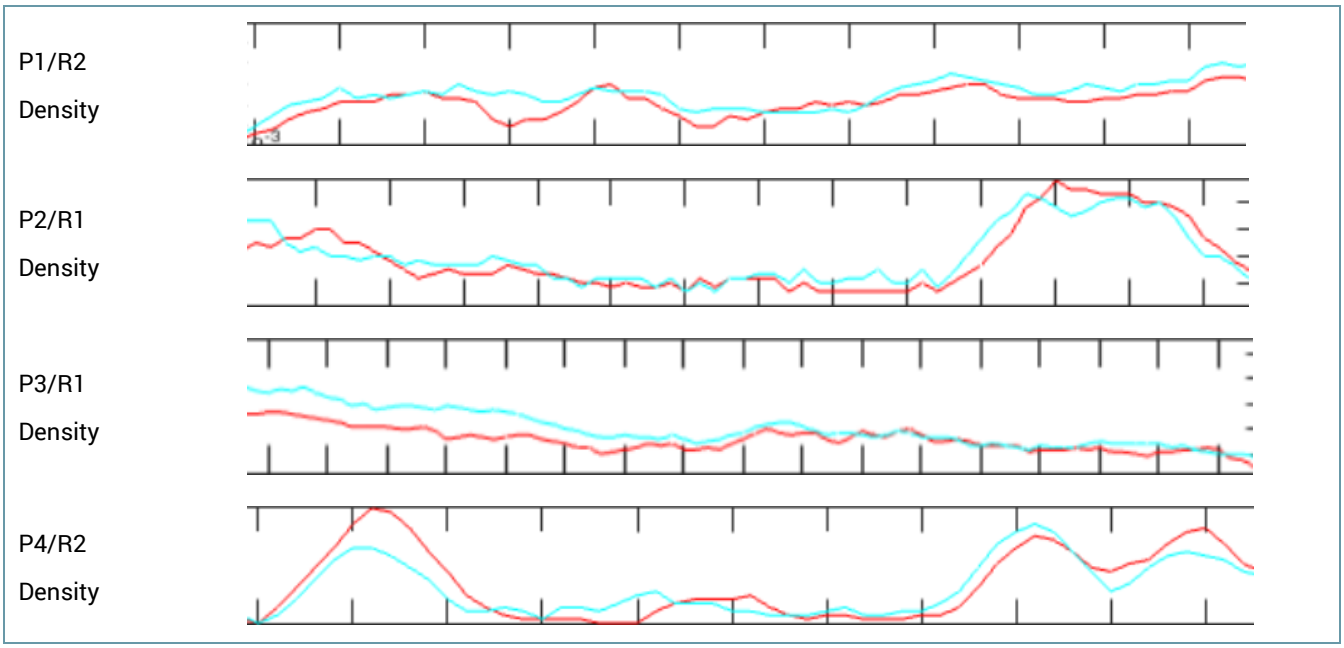

Figure 3: Graphical representation of density in synchronising improvisations: The X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents notes played per second. Researcher's (red) trend and participant's (blue) trend match as close as possible. Researchers could not synchronise every musical element (melody, rhythm); synchronicity was most apparent in note density (shown above).

The final, and potentially most significant, finding is that synchronisation was considerably more successful in some improvisations than others, and this influenced the participants' subjective experiences of connection and influence of the researchers' playing. When synchronicity was high, participants reported high levels of connection with the researchers and positive feelings regarding the researchers' influence. Conversely, participants reported low levels of connection and a negative perception of the researchers' influence, after improvisations that were not successfully synchronised. For example, P3's improvisation with both R1 and R2 contained high levels of synchronisation throughout. This is demonstrated in Figures 4 and 5, showing the synchronicity throughout the improvisations:

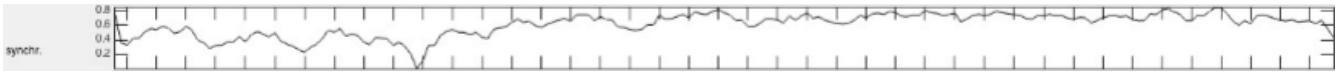

Figure 4: Synchronicity in synchronising improvisation between R2 and P3.

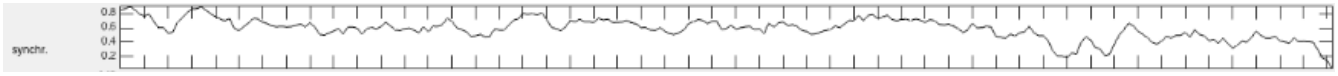

Figure 5: Synchronicity in synchronising improvisation between R1 and P3.

The high level of synchronisation led participants to a positive subjective experience in both improvisations. P3 provided the following response to the question "How did the researcher's playing influence your playing?" after improvising with R1: "with her playing similarly, I felt content to do my own things knowing that she would be there" (P3, 2018). Following the improvisation with R2, P3 responded to "did you feel a musical connection" with "yes, it definitely felt like she was basing her movements on what I was playing". Both responses indicate that, when successful, synchronising is an effective technique for developing connection and musical relationship.

On the contrary, P1 had low levels of synchronisation throughout the improvisation with R2. The following figure shows the synchronisation between P1 and R2:

Figure 6: Synchronicity in synchronising improvisation between R2 and P1.

P1 reported low levels of connection, saying, "not too much [connection] besides having similar ideas in the improv". In addition, his response to "how did the researcher's playing influence your playing?" was as follows: "not too much, I was trying to get out of the way at times so we didn't clash, but I found it slightly difficult". The latter response indicates that the researcher's playing was not contributing to a positive subjective experience, potentially contributing to a lack of connection with the researcher.

Similar results occurred with P4 and R1, with the improvisation synchronisation displayed in the following figure:

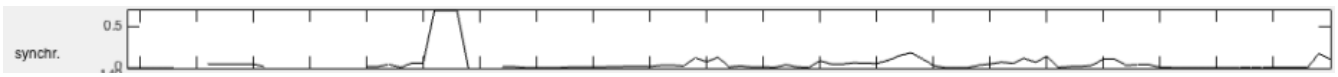

Figure 7: Synchronicity in synchronising improvisation between R1 and P4.

P4 reported feeling "musically chased" and in response to the question about connection said, "a little; it was a bit of a 'tag, you're it' sort of feeling". Although P4's subjective experience of being chased could be considered positive and playful, it could also mean a negative type of 'chasing'. As both P1 and P4's experiences could be interpreted as negative, this may indicate that this technique is the most effective when implemented as close to Bruscia's definition as possible, with high levels of synchronisation.

Extending

According to Bruscia (1987), extending is used to lengthen a client's musical phrase with the intention of aiding the client's expression of a complete idea. Extending may involve adding to the end of the client's phrase or creating an overlapping phrase to supplement the client's music. In most of the MTTB graphs, this was demonstrated by moments of synchronicity in mean pitch, followed by individual playing. This is demonstrated in Figure 8.

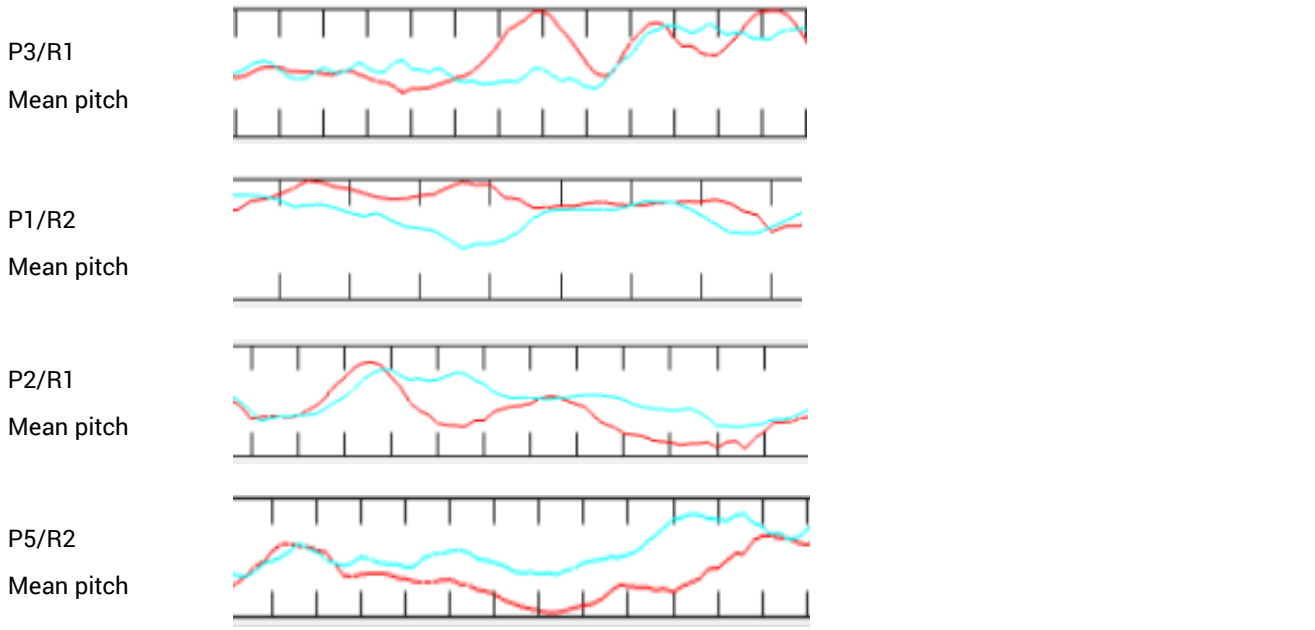

Figure 8: Graphical representation of mean pitch in extending improvisations: The X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents the MIDI value of pitches. Researchers' (red) trend and participant's (blue) trend match to begin, then branch off individually. Extending was most apparent in mean pitch (shown above).

According to Bruscia's definition, these examples represent extending by overlapping the phrase. It was not as clear how extending by adding to the end of the phrase would be represented within the MTTB graphs. In addition to alternating between synchronicity and individual playing in mean pitch, the pulse clarity was generally very high in the improvisations and there was high synchronicity in mean velocity.

There were very few consistencies or patterns in the individuals' responses to the improvisations. Some participants noted similar ideas of call-and-response, imitation, and playing off each other in response to "how did the researchers' playing influence your playing?" There were varied answers relating to feelings of connection in the music. For example, P1 responded to the question about musical connection with, "Yes, I did. I felt like I was supporting them in the music making. I also felt that I was the one copying the researchers' choices and that led to further discovery of the music." In comparison, P2 and P3 said "not as much as the last few times" and "not particularly" respectively. Finally, many of the participants' responses indicated that they were able to express themselves musically to a certain extent, but not as effectively as previous

improvisations. For example, some participants' responses were as follows "I think so; almost; partly".

Participants' experiences of musical expression, influence, and connection were inconsistent. Because of this, it is difficult to draw conclusions about the potential clinical implications and applications in relation to these three elements.

Symbolising

Bruscia (1987, p. 536) states that symbolising is "having the client use something musical (e.g. instrument, motif) to stand for or represent something else (e.g. event or person)". To maintain consistency across all improvisations, the researchers instructed the participants to think of an object in the room that could be represented musically, and not to let the researchers know of what they were thinking. This allowed the researchers to respond to the improvisation without the risk of influencing the improvisation, which led to a wide variety of improvisations that may not have been accurately depicted in the graphs. Because of this, while there is evidence of imitation and holding (as seen in Figure 9) depending on the nature of the improvisation, there is no consistent trend or pattern, such as a phase shift observed in imitating or matching graphs found in synchronising, that emerged from the graphs.

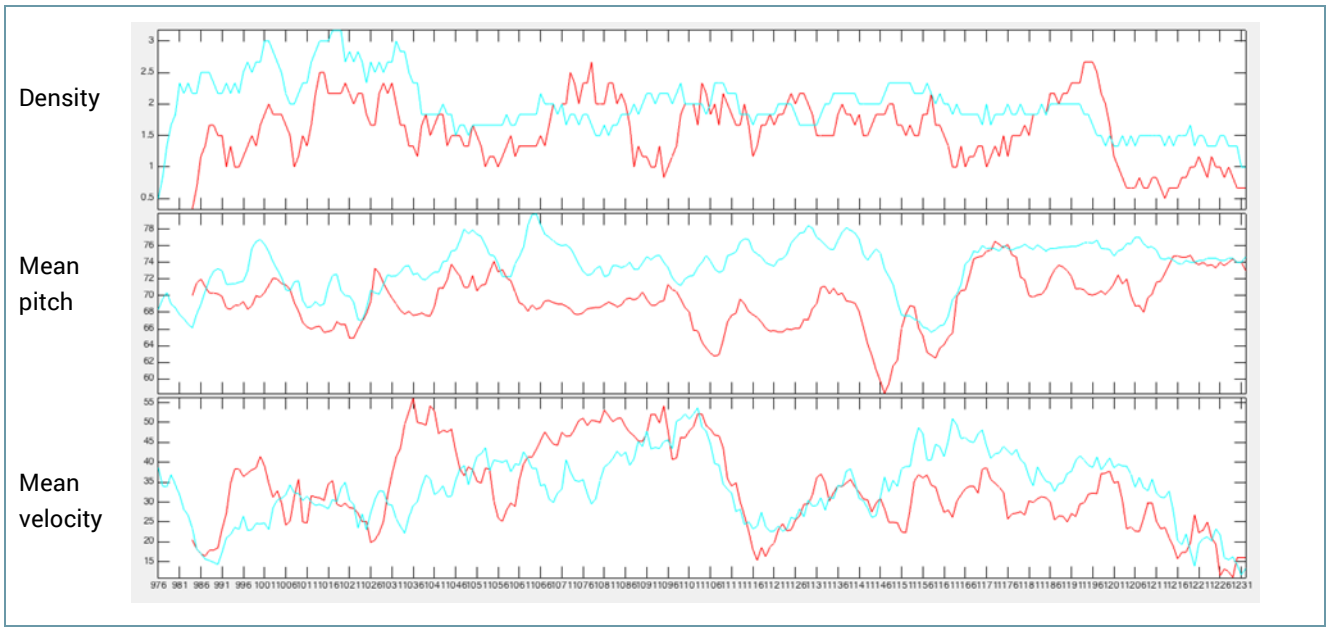

Figure 9: Most evident trends observed in symbolising, between R2 (red) and P3 (blue). The X axis represents time, and the Y axes represent notes per second (density, mean velocity) and pitch in MIDI note numbers (Mean Pitch). In this particular improvisation, imitation (phase shifts) between the researcher and the participant can be observed in note density, mean pitch and mean note velocity. Furthermore, holding can be observed in Mean Pitch. Due to the high level of variance in each improvisation implementing symbolising, each improvisation graph looked different, demonstrating a lack of consistency in trends between improvisations. The high level of variance found in improvisations can be paralleled with a high level of emotional attunement that may not necessarily be found in a computer-generated graph.

Responses to symbolising improvisations were mixed, with some of the participants indicating that the researcher did not influence their playing. P4 further explained that they "felt like the leader, but the ending had more balance" when playing with R1. Most indicated a musical connection with the researcher, with P1 explaining that they "felt happy with the playing and even though [R1] didn't know the main idea she was able to gain feeling of it". Most participants felt able to express themselves musically. Those who did not feel a musical connection or felt that the researcher influenced their playing described themselves as "being in their own head" or "fixated on an idea" rather than listening to the researcher's musical responses. The participants who stated that they could not express themselves musically suggested this was linked to challenges associated to learning how the MalletKAT instrument worked. Two participants in two separate improvisation sets felt the most connection in this technique.

Holding

According to Bruscia, to successfully use the clinical technique holding, one must integrate reflecting, pacing, grounding and centring in order to both reflect and contain the client's music (p. 552). The nature of the integration and implementation of grounding may depend on both the client's needs and the therapist's interpretation of how to reflect and contain. As a result, the operational definition of holding is abstract and may be carried out differently depending on various factors such as therapist's theoretical approach, clinical experience, and musical training. For this reason, the researchers did not have agreed-upon concrete parameters for their playing. Instead, they attempted to play in a way that both reflected and contained the student's playing.

In 'holding', therefore, there were few continuities. In the results reported above, trends were most often found between individual elements of music, across all improvisations. In order to realise the trends that align with the nature of holding, it was necessary to examine trends and patterns found in different elements within the graphs. In order to do so, researchers analysed trends and patterns across different elements of music for each graph, comparing all graphs to each other. After broadening the analysis, it became clear that there are musical representations of both reflection and containing within each improvisation, but in different elements depending on the improvisation. In addition, there is evidence of researcher differences in the interpretation of reflection versus containing.

In every improvisation, there was at least one element with a high level of synchronicity for the majority of the improvisation. This synchronicity is seen most often in pulse clarity, but also in mean pitch, density, pitch standard deviation, and mean duration. In the graphs, this is visually represented by similarities in researcher and participant line contour. Based on previous results, synchronicity in the MTTB graphs may be a representation of musical reflection which in turn generates feelings of support in the participant. In addition, in the majority of improvisations, the researcher's music was underneath or less than the student's music in at least one element of the music. This is seen in mean pitch, mean velocity, pitch variation, and density.

In the graphs, this is visually represented by the researcher's line being below the participant's line; what this relates to musically depends on the element itself. For example, if the researcher's density line is below the participant's, it means that the researcher played less notes at any given

time. If mean pitch is lower, it indicates that the researcher was playing lower notes than the participant while improvising. Based on previous results and the subjective interpretations of the participants, this is likely a representation of containing or grounding. According to these results, it is likely that the researchers attempted to use one element of the music to provide support and reflect the participant while using another to contain and ground the music. The following graphs demonstrate this visually, with each one isolating two "reflecting" elements and one "containing" element.

It is also important to note the researcher differences represented in the graphs above. In both improvisations, R1 remained below the participants in mean pitch, meaning that she consistently played lower notes than the participant. In a follow-up discussion regarding these results, R1 articulated that her perception of containing and grounding involves using the lower register of an instrument. The element that R1 used to reflect and support was dependent on the individual. There were no consistencies in the elements R2 used to reflect and ground, beyond synchronisation in pulse clarity.

Our findings demonstrated in Figures 10 to 13 suggest the researchers seemed to effectively reflect and contain the participant's music in most improvisations, using mean pitch, mean velocity, pitch variation, and density, pitch standard deviation, and mean duration to do so. In response to the first three questions, participants provided a variety of responses, with little consistency. Some participants expressed that the researcher had little influence on their playing, while others felt there was a significant amount of interaction within the music. In addition, some felt a connection stemming from musical dialogue, while others felt little to no connection. The most consistency occurred in response to "did you feel that you were able to effectively express yourself musically?" In two of the ten responses, participants indicated difficulty expressing themselves musically.

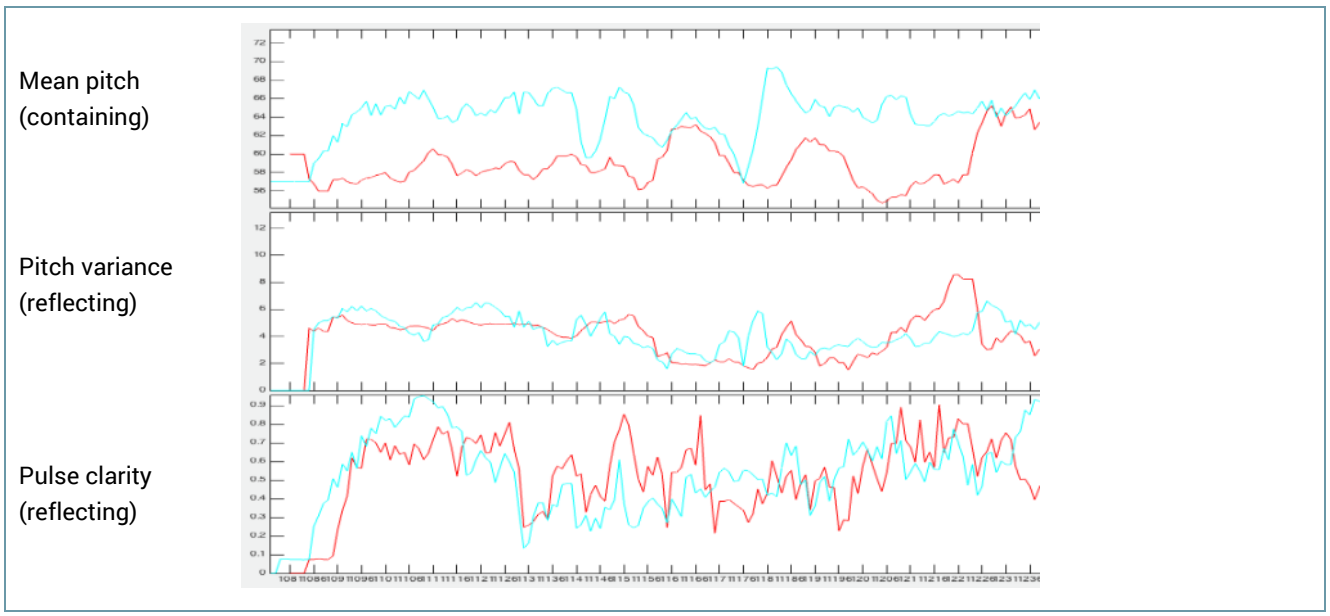

Figure 10: Evidence of reflection and containing in holding improvisation: R1 and P1. In all graphs the X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents the MIDI note value for pitches, standard deviation of MIDI note values, and note subdivisions within the pulse respectively.

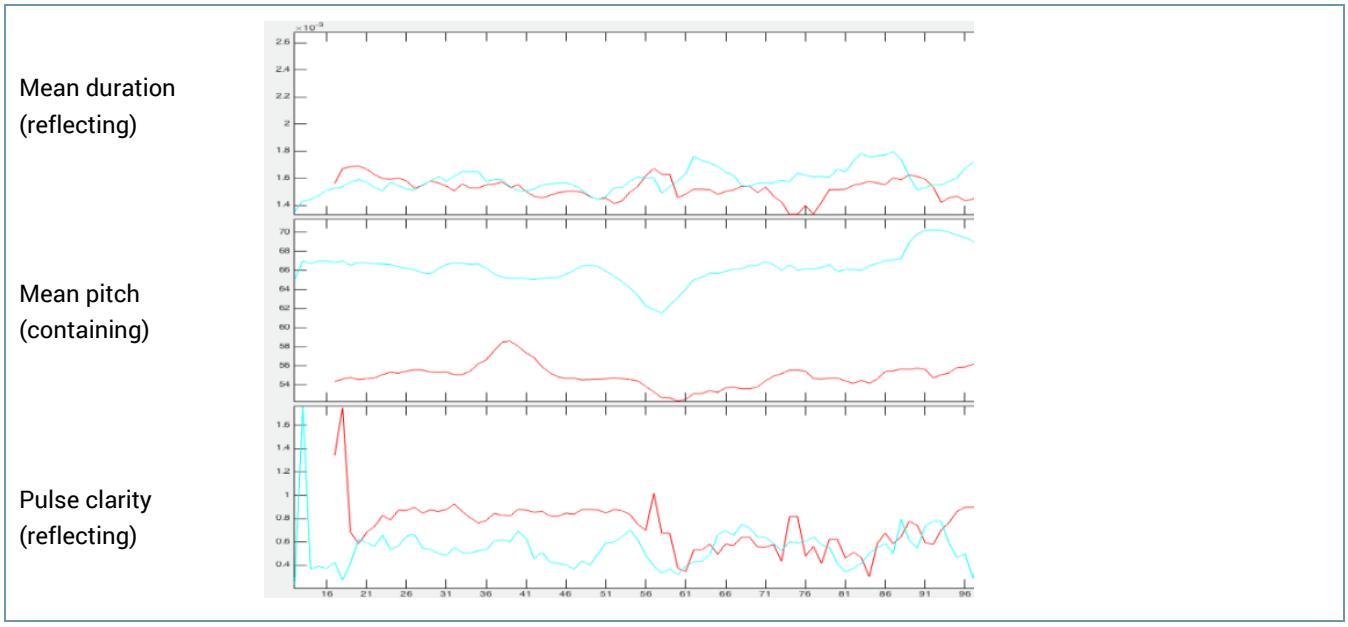

Figure 11: Evidence of reflection and containing in holding improvisation: R1 and P2. In all graphs the X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents the duration the note is held, the MIDI value for pitches, and note subdivisions within the pulse respectively.

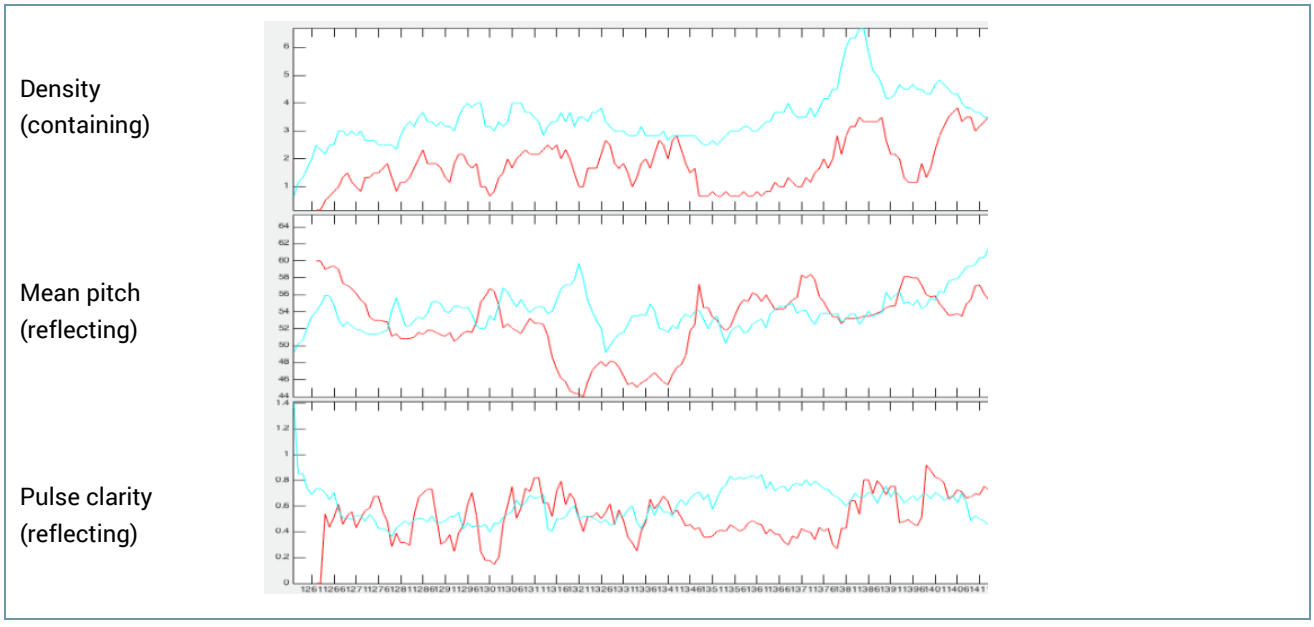

Figure 12: Evidence of reflection and containing in holding improvisation: R2 and P3. In all graphs the X axis represents time, with each graphic being an excerpt of the total time of the improvisation The Y axis represents note played per second, the MIDI value for pitches and note subdivisions within the pulse respectively.

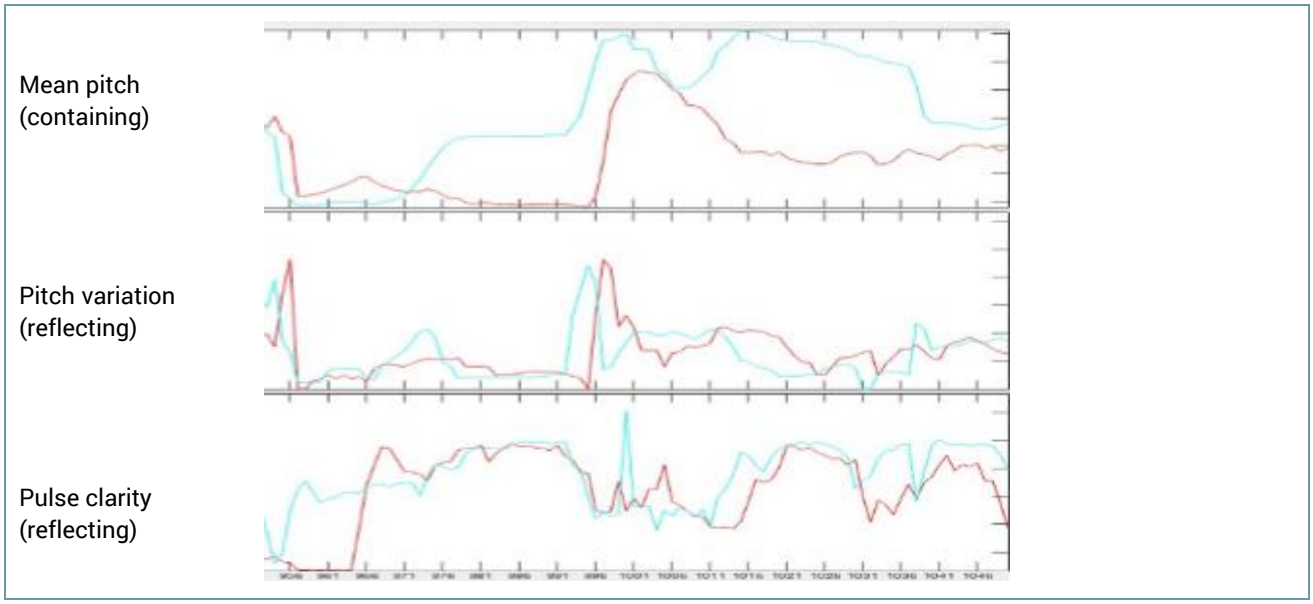

Figure 13: Evidence of reflection and containing in holding improvisation: R1 and P1. In all graphs the X axis represents time, with each graphic being an excerpt of the total time of the improvisation. The Y axis represents the MIDI value for pitches, standard deviation of MIDI note values and note subdivisions within the pulse respectively.

Incorporating

Bruscia defines incorporating as "using a musical motif or behaviour of the client as a theme for one's own improvising or composing, and elaborating it" (1987 p. 535), and explains that using incorporation effectively can allow the client's music to be reinforced, accepted and also allow the client to work through specific feelings, musical or otherwise. In the MTTB graphs shown in Figure 14, phase shifts similar to those seen in imitating are observed at the beginning of most improvisations. As the improvisations progress, the trends vary due to the individual nature of each participant's improvisations. Phase shifts could be observed through the improvisations depending on what ideas were incorporated in the moment.

Participants had varied responses to the 'incorporating' technique. Those who found that the researcher did have an influence on their playing noted that the improvisations felt more collaborative and that the researchers had opportunities to present their ideas. For example, P2 explained that they "feel more comfortable and relaxed to improvise, especially since [they] know more about this instrument." Most responses indicated that the participant did feel a musical connection with the researcher, with only two indicating a lower level of connection. Participant 5 explained that when playing with R2 they felt "like the researcher playing in and through my rhythms allowed me to listen to them play, which encouraged me to keep my own feel". Finally, the majority of responses indicated participants were able to express themselves musically, with P5 explaining that they and R1 were "a team playing alongside one another as opposed to making something together". Others indicated that they were able to express themselves "eventually" or "mostly". Finally, three participants across four improvisation sets felt the most connection in improvisations implementing this technique.

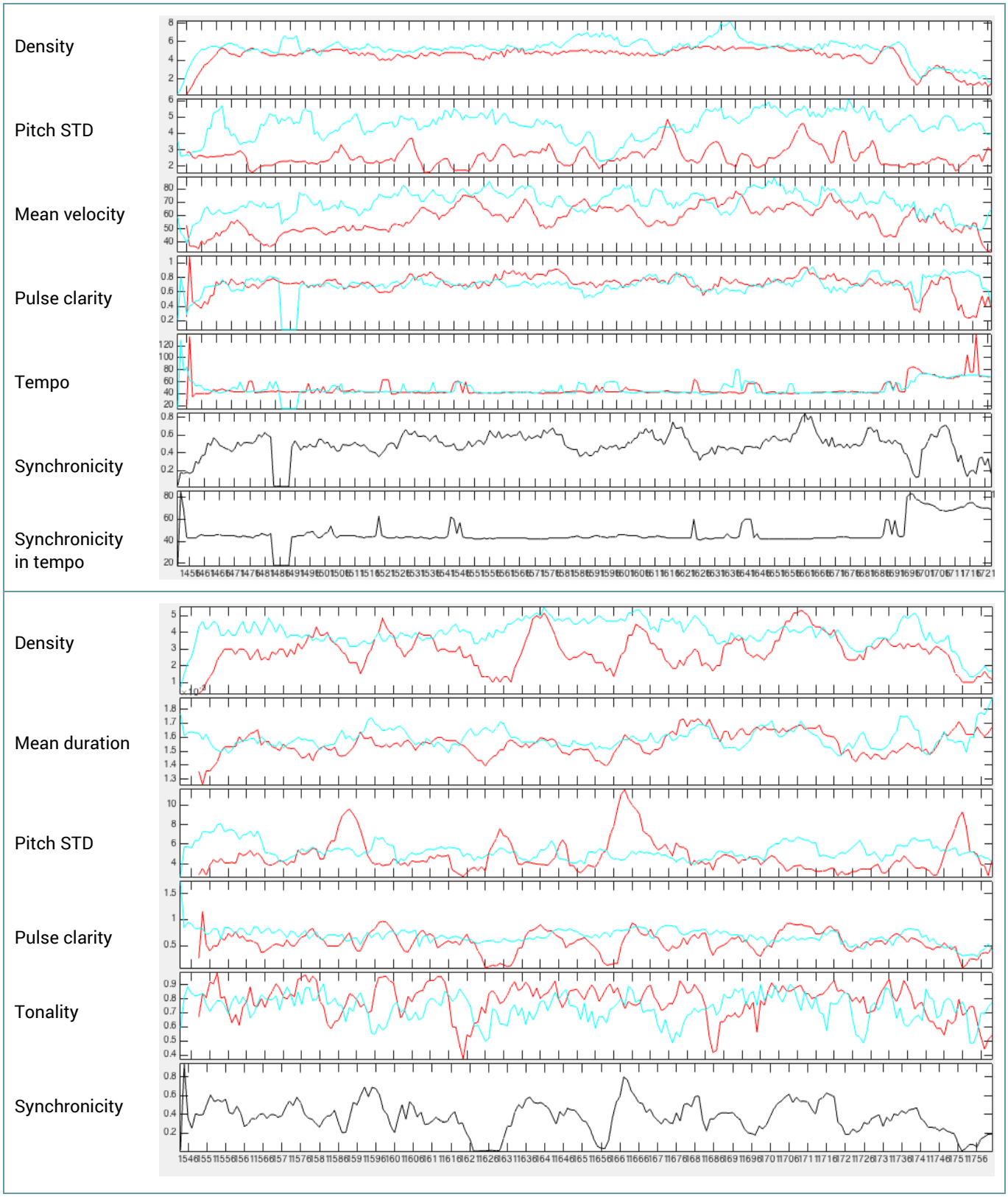

Figure 14: Incorporating in P3's improvisations with R1 (top) and R2 (bottom). The X axis represents time and the Y axis represents notes per second (density), pitches in MIDI note numbers (pitch STD, mean velocity), note subdivisions (tempo, pulse clarity) and correlation coefficients in tonality and synchronicity (tonality, synchronicity in tempo). Similar to symbolising, there is a high level of variance in trends evidenced in this technique after an initial phase shift, showing evidence of imitation. This is again likely due to the high level of variance in each improvisation.

Rhythmic grounding

Bruscia's (1987) definition of rhythmic grounding ensures that the therapist is maintaining meter throughout the improvisation and not meeting or matching the client's intensity. Interpretation of this technique was varied: the researchers maintained a steady beat with the participants for approximately half of the improvisations, shown in Figure 15, and the researchers appeared to follow the participants' tempo in the other half of the improvisations, shown in Figure 16. This phenomenon occurred equally across both researchers' playing.

When using rhythmic grounding, the researchers' mean note duration, pulse clarity and tempo were consistent throughout. In addition, there was evidence of high pulse clarity. Improvisations using rhythmic grounding found consistent playing of the researcher in mean note duration, pulse clarity, tempo, and there was evidence of high pulse clarity. Synchronicity in tempo varied depending on whether the researcher followed the participant or remained constant regardless of the participant's tempo. Furthermore, the software used was not entirely accurate in analysing tempos musically – there is a possibility that a highly rhythmic improvisation could be depicted differently on the graphs. Decreases and increases in tempo appear to be consistent regardless of the researchers' interpretation of the technique as well, which appear to be a doubling, or a halving of the note values used in improvisation.

Responses to this improvisation in regard to researcher influence were varied. P3 and P4 noticed that the researcher "supported" the improvisation while "still leading"; P3 also noted that the researcher was "supporting [them] and allowing [them] to do [their] own thing". Other participants noted that the researcher had a "strong influence" on the improvisation, as well as a sense of "modelling ideas" for the participants. P3 in particular explained that there was "not too much" influence on their improvisation with one researcher - this improvisation in particular was very rhythmic to begin with and did not necessarily require rhythmic grounding during the improvisation. The participants' perception of this technique aligns with Bruscia's intent for rhythmic grounding, as it is meant to be a structuring technique rather than one to elicit an emotional response.

DISCUSSION

This exploratory study explored eight of Bruscia's (1987) clinical improvisation techniques that are often used with autistic clients (Skinner et al., 2020). The techniques were investigated by using music-adapted technology and the MIDI Toolbox designed for MATLAB, as well as MTTB (Erkkilä et al., 2004). In this study, the graphs generated in the MTTB were used to generate a deeper understanding of these techniques and their possible clinical implications, relating to the connection between a participant and researcher, and musical expression on behalf of the participant. The analysis also provided insights into how the techniques are implemented and how their implementation might be represented visually. This information may serve as a new perspective for a therapist to successfully implement the above-mentioned techniques into clinical sessions with autistic clients. The following paragraphs explore the clinical implications as well as the limitations of this study and ideas for future research.

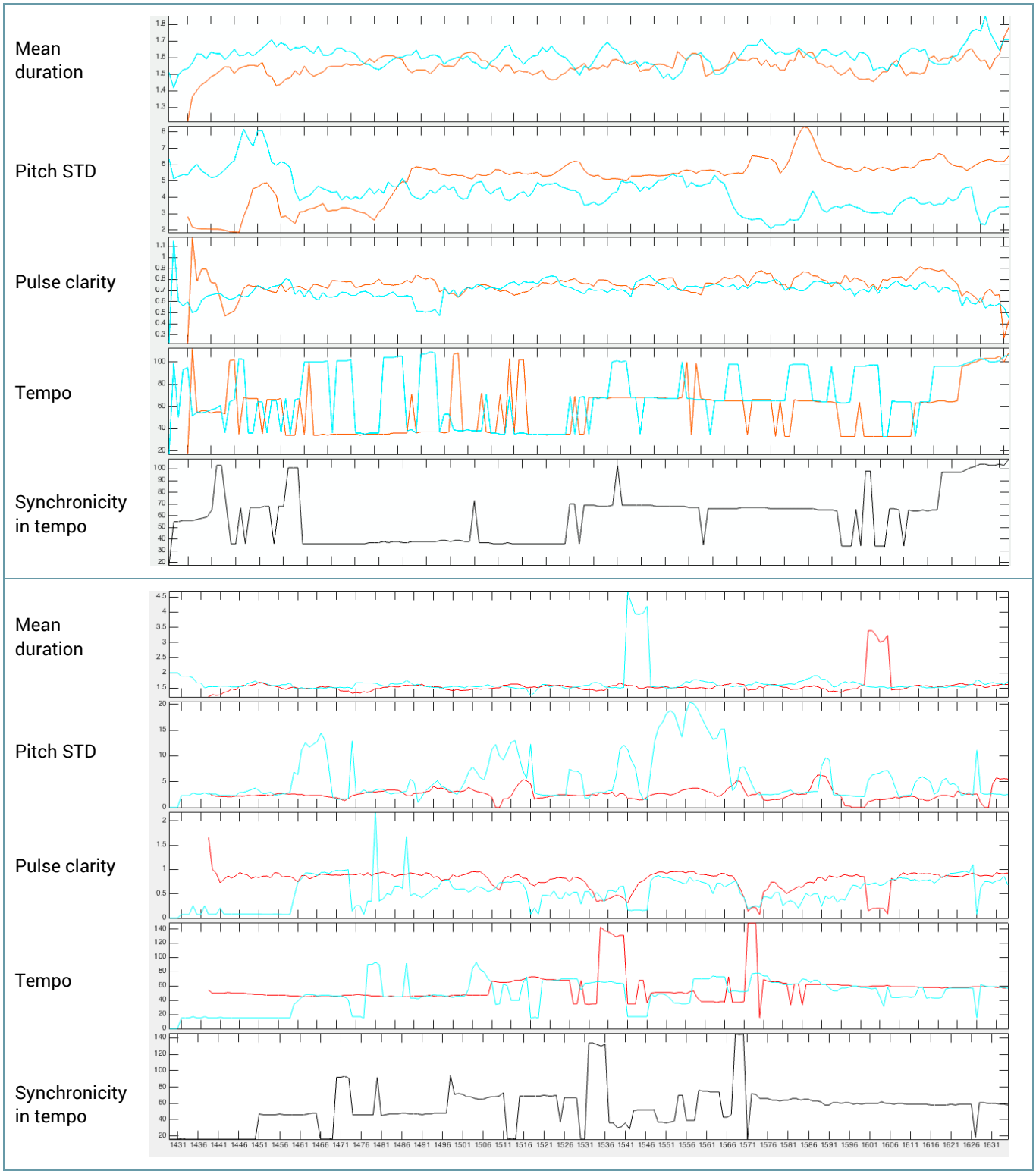

Figure 15: Evidence of the researcher following the participant: R1 and P3 (above) and R2 and P4 (below). The X axis represents time and the Y axis represents pitches in MIDI note numbers (Pitch STD, Mean Velocity), note subdivisions (Tempo, Pulse Clarity) and correlation coefficients in tonality and synchronicity (synchronicity in tempo). A high variance of synchronicity in tempo (bottommost graph) and phase shifts similar to those found in imitation can be observed.

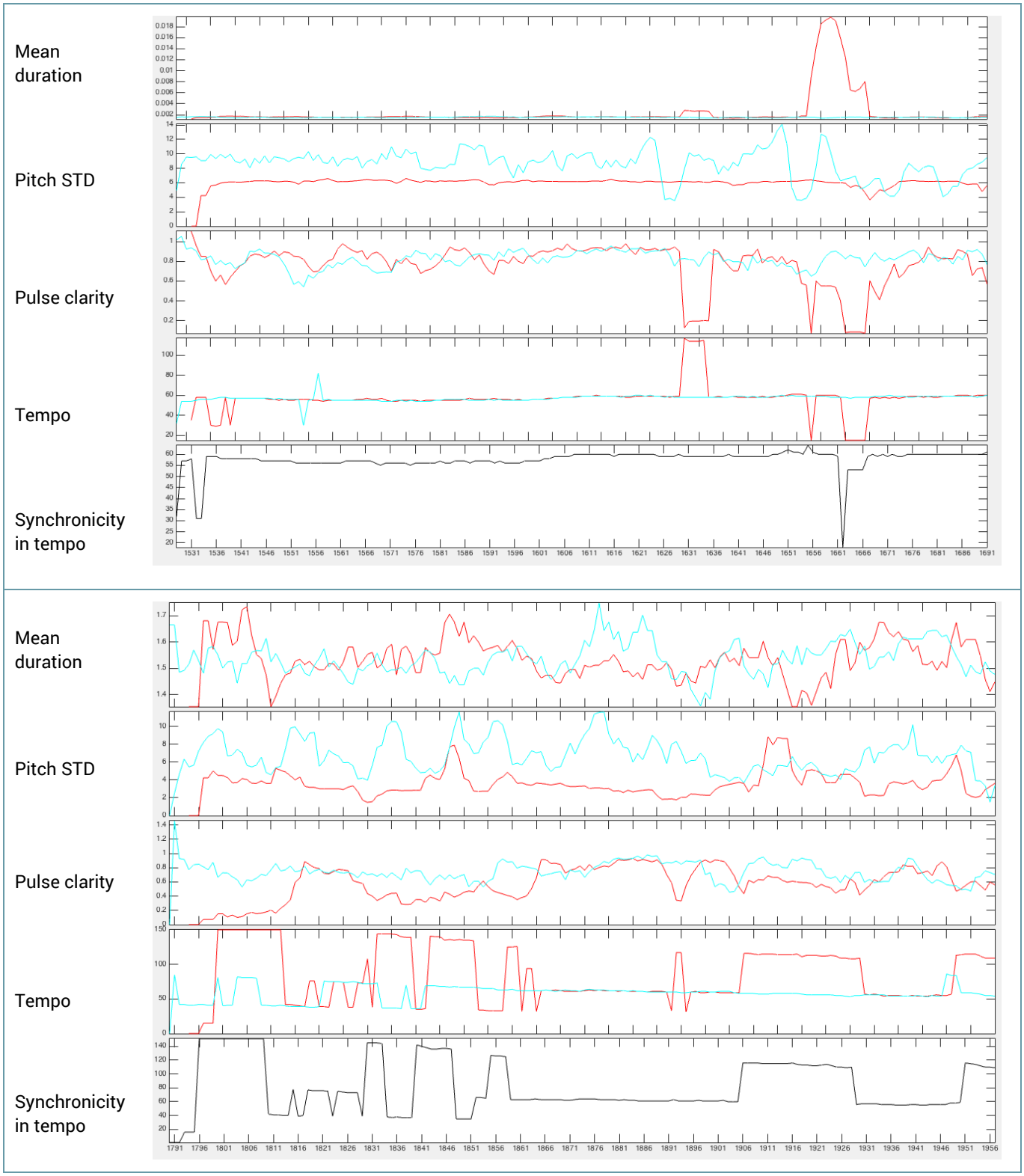

Figure 16: Evidence of the researcher maintaining a consistent tempo: R1 and P1 (above) and R2 and P3 (below). The X axis represents time and the Y axis represents notes per second. Synchronicity in tempo is high, and the therapist's playing is noted by the straighter (red) lines in both improvisations.

Imitating

According to the phase shifts identified in the data analysis and the use of descriptors such as "call-and-response" and "duet", the implementation of imitating in the improvisations matched the definition and outcomes listed in Bruscia's taxonomy. This is likely due to the concrete nature of the technique, which left little for the researcher to interpret when improvising with a participant. Furthermore, there is a variety of "responses" (Bruscia, 1987, p. 533) in which a therapist could imitate a client; for example, rhythmically or melodically. The imitation of any response was represented in the MTTB graphs regardless. Although this experimental study was conducted with music students and none of the participants identified as autistic, it could be speculated that imitation could be considered a safe starting technique when working with clients with autism. Participants noted the reciprocal nature of the music and half of participants reported feeling supported when imitating was used. Generally, participants did not feel influenced by the researcher's music. These are indications that imitation could build client rapport by demonstrating musical support and acceptance. By imitating phrases of the client's music, it may enable them to feel heard and accepted through their music-making. Through the eyes of the researcher, the concept of imitation is fairly concrete, allowing for less interpretation in regard to the researcher or clinician's contribution. Imitating can occur within different elements of music, allowing for some individual interpretation.

Reflecting

Our finding that most participants were able to express themselves musically and the majority felt a connection with the researcher suggests that reflecting could be an effective technique for fostering connection and encouraging client expression. Perhaps the effects related to connection and expression may heighten if the music therapist is able to adequately capture the individual in their musical reflection.

The lack of consistencies and trends in the musical data could relate to the definition of 'reflection' and its practical translation. As mentioned, Bruscia's definition of reflecting is "matching the moods, attitudes, and feelings exhibited by the client". Comparing the definition of reflecting to other techniques such as imitating, its abstract nature allows for individual interpretation and application. The graphs highlight few patterns and many inconsistencies, with the exception of tonality and mean pitch. In addition, it could be argued that certain elements of music, such as the emotionality experienced in music, are not able to be represented graphically. The element of music likely to do so would be tonality and key areas, which was the one main consistency throughout the reflecting graphs. There was a high level of synchronicity in tonality between the researcher and participant.

It is possible that the high level of synchronicity in tonality relates to the perception that the key chosen by the participant relates to their mood and feeling and thus the researcher synchronised with the key area in an effort to reflect what the participants were communicating. Variability in other elements of the music indicate that the researchers interpreted musical reflection differently and potentially implemented it differently depending on the participants. It is also possible that the

variability relates to the lack of therapeutic relationship and knowledge of the individual, making it difficult to reflect their moods and feelings. In other words, this may be a difficult technique to implement experimentally. Potential next steps for future research could be to further investigate the tonality in the improvisations using MATLAB functions, i.e. do we associate tonality with the identity of the music, potentially extending to the person's feelings/presentation? How can we effectively and succinctly demonstrate researcher differences in the interpretation of the technique?

Synchronisation

When implementing synchronisation in improvisation, researchers experienced a spectrum of success, ranging from high levels of synchronisation throughout the improvisation, to only brief moments of synchronisation. This is likely because the conditions in which synchronisation was implemented were not parallel with clinical situations. Bruscia explains that this technique is geared towards promoting self-awareness and relationship development (1987, p. 535), which would likely take place over a number of sessions, depending on the client. This technique was implemented third in the session, thus not likely replicating a trajectory of this technique should it be implemented in a clinical setting. Logistically, it is difficult and sometimes impossible to replicate an individual's playing at exactly the same time they are playing. Although unexpected, the lack of consistent and successful results provided insight into the clinical considerations associated with this technique.

As evidenced in the results section, synchronisation can be an effective technique for establishing musical connection, through musical support provided by the therapist. However, based on the results, there is evidence that ineffective use of synchronisation (low levels of musical synchronisation) may have a negative impact on the musical connection between the client and therapist and create a negative subjective experience for the client. Based on this, this technique should be used when there is a higher likelihood of successfully replicating the client's music-making. For example, this technique would likely be more effective when there is an established pattern in the music or the therapist is familiar with the client's style of playing.

Extending

The alternating moments of togetherness and individual playing in the mean pitch when extending likely relates to the definition and overall goal of extending, which is to add to the client's phrase in order to aid in the expression of a complete idea. The moments of synchronicity were likely imitation of the participant's musical ideas, followed by the addition of a musical idea which would break the synchronicity in mean pitch. Beyond the representation of extending in the music and MTTB graphs, clinical implications of the technique are not clear due to the varied responses to all questions with the questionnaire. It is possible that the participants did not require assistance extending and completing phrases, therefore this technique did not aid in expression. Because of this, it is difficult to draw conclusions about the clinical application of this technique from the combination of musical and other data. Further investigation would be necessary to gain further insight into how and why this technique could be used.

Symbolising

This technique yielded high levels of musical connection and expression. This is likely due to the high variance of the researchers' interpretations within the context of the improvisation as well as the method in which the researchers approached the participants' motifs. The success of this technique likely also lies in the lack of the researchers' abilities to attribute the musical motif to a non-musical entity. It might also depend on the participants' ability to make these connections; and in a clinical situation, for example, whether they can communicate verbally. Within the context of a clinical session, it appears as though symbolising may be effectively implemented once a client and a therapist have established rapport, with the goal of increasing emotional expression as sessions progress.

Holding

In combining the subjective experiences of the students with the improvisation data, multiple facets relating to the understanding and use of holding within clinical improvisation were realised. The first and potentially most significant finding relates to the definition, understanding and execution of holding (Bruscia, 1987), which may mean different things for different music therapists depending on their theoretical, cultural, and philosophical framework. In *Improvisational Models of Music Therapy*, Bruscia does not provide strategies in which to accomplish the difficult task of both reverberating "the client's feelings while also offering a musical structure for containing their release" (Bruscia, 1987, p. 522).

Through the analysis of improvisations, a concrete musical representation of the technique emerged; as discussed in the results, researchers accomplished both music reflection and musical containing by using different elements in the music for each purpose. The elements used for reflection versus containing differed for both the researcher and student. However, both were present in some combination of elements, in almost all improvisations. This knowledge may be used by clinicians moving forward, as well as by educators teaching the use of holding for clinical improvisation.

Incorporating

While the evidence of its effectiveness was not fully realised through the MTTB graphs, a high level of success was observed in the implementation of incorporation into the improvisations. Participants expressed an ability to play their ideas while still being supported by the researchers, as well as the ability to play off of the other's ideas. This is reflecting Bruscia's aim of accepting the client's music (1987) with a possibility of the participant wanting the researcher to have a voice within the improvisation as well.

Bruscia's definition and explanation of the technique notes that incorporating can be used to build a musical repertoire between a therapist and a client (1987). The concept of the technique shares the concrete nature of imitation with little interpretation. It also includes some flexibility and

the ability to explore musically to allow for deeper emotional expression or a stronger alliance between the client and the therapist.

Rhythmic grounding

The use of rhythmic grounding in improvisation was shown to be an effective support technique, with the goal of leading to increased expression. This was evident despite the different interpretations of the technique. Bruscia (1987) describes rhythmic grounding in *Improvisational Models of Music Therapy* as a "structuring technique" (p. 535), where the therapist must "avoid controlling or constricting the client's improvisation through rhythmic grounding" (p. 541). Following a client within the scope of rhythmic grounding could allow for more emotional expression, since the therapist would not be containing the music, rather meeting them in their current state. Maintaining a consistent tempo allows for more containing, with the opportunity for emotional expression once the client feels comfortable with the scaffolding laid out by the therapist. Though there was a variance in the extent to which the researchers structured the improvisation, connection was observed between the researchers and the participants in the questionnaire responses. The nature of this particular improvisation could have altered the results. If an improvisation was rhythmic to begin with, for example, rhythmic grounding might not be an effective technique for this improvisation in particular.

CONCLUDING THOUGHTS

In conclusion, using music-adapted technology and statistical software provided a new lens for understanding of elements of improvisational music therapy interventions. By combining graphic representations of the improvised music with the participants' subjective experience of the improvisation, we were able to gain insight into how improvisation techniques are represented in different elements of music, as well as potential clinical implications and applications. The analysis also provided insights into how the techniques are implemented and how their implementation can be represented. This information may serve as a foundation for a therapist to successfully implement the above-mentioned techniques into a clinical session.

The visual representation allowed us to draw conclusions on the representation of musical relationship, connections and emotional expression when paired with the participants' subjective responses. In addition, we were able to examine similarities and differences in the researchers' interpretation and implementation of the improvisation techniques. For the most part, the participants' subjective experiences had a tendency to align with the definitions put forth by Bruscia in his taxonomy of improvisation techniques. The graphic representation was varied depending on whether or not the technique was meant to structure a session for a client or to elicit an emotional response from a client.

As researchers we have also learned how to use each improvisational technique more effectively and more purposefully in a clinical session. We hope the knowledge gained in this study will benefit other music therapists in similar ways. The results of this research may also provide

some insights into the implementation of clinical improvisation techniques typically utilised in music therapy with autistic clients.

Limitations of the study

This research study had several limitations, such as the limitations created by the recruitment criterion of music students. For example, typical music therapy clients will normally not be musically experienced to degree level. The set order of improvisations the participants played presented another limitation of the study. For example, the placement of rhythmic grounding technique as the last one in the improvisation order could have presented a potential skew of the results. It was also noted that the participants felt more accustomed to the MalletKAT instrument at this point, which could have allowed for increased expression. Some participants also noted that they were running out of creative ideas at this point, which could have altered their perception of musical expression and connection with the researcher. Finally, a limitation of this study, as with any laboratory experiment, is the lack of genuine context: it is different to work in a clinical setting with a particular client's strengths and needs in mind.

FUTURE RESEARCH

In future, it would be interesting to conduct a clinical trial with autistic participants testing the same eight improvisation techniques. Potential next steps of future research could also include looking closer at melodic contour, which relates to Bruscia's goal for the technique, and comparing the MTTB graphs of individuals who felt connection and expressivity. Another potential next step for future research could be to further investigate the tonality in the improvisations using MATLAB functions, i.e. do we associate tonality with the identity of the music, potentially extending to the person's feelings/presentation? How can we effectively and succinctly demonstrate researcher differences in the interpretation of the technique?

FUNDING STATEMENT

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Ελληνική περίληψη | Greek abstract

Η χρήση μουσικά-προσαρμοσμένης τεχνολογίας για την εξερεύνηση των κλινικών τεχνικών του Bruscia που παρουσιάζονται στην έρευνα για τον αυτισμό: Μια πιλοτική μελέτη

Ashley Kurkjian | Kathleen Skinner | Heidi Ahonen

ΠΕΡΙΛΗΨΗ

Η παρούσα πιλοτική έρευνα μελετά τις οκτώ συνηθέστερες τεχνικές κλινικού αυτοσχεδιασμού του Bruscia (1987) που χρησιμοποιούνται στη μουσικοθεραπεία με άτομα με αυτισμό: μίμηση [imitating], αντανάκλαση [reflecting], συγχρονισμός [synchronizing], επέκταση [extending], συμβολισμός [symbolizing], κράτημα [holding], ενσωμάτωση [incorporating] και ρυθμική γείωση [rhythmic grounding] (Skinner, Kurkjian & Ahonen, 2020). Οι τεχνικές διερευνήθηκαν από κάθε συμμετέχοντα (φοιτητές μουσικής), απομονώνοντας και χρησιμοποιώντας την κάθε τεχνική σε οκτώ σύντομους αυτοσχεδιασμούς. Οι αυτοσχεδιασμοί ηχογραφήθηκαν με το λογισμικό LogicPro που ήταν συνδεδεμένο με MalletKAT όργανα. Στη συνέχεια, οι αυτοσχεδιασμοί αναλύθηκαν μέσω τεχνολογίας προσαρμοσμένης για τη μουσική, το MIDI Toolbox που είναι σχεδιασμένο για το MATLAB, ένα πολύ-παραγοντικό περιβάλλον αριθμητικής υπολογιστικής και προγραμματιστικής γλώσσας που έχει αναπτυχθεί από την MathWorks, καθώς και το Music Therapy Toolbox (MTTB) (Erkkilä, Lartillot, Luck, Riikkila & Toiviainen, 2004). Επιπλέον, οι συμμετέχοντες παρείχαν περιγραφή της προσωπικής τους εμπειρίας σε κάθε αυτοσχεδιασμό σε μορφή ερωτηματολογίου. Τα ερευνητικά ερωτήματα ήταν: 1) Πώς αντιστοιχίζονται οι οκτώ βασικές τεχνικές κλινικού αυτοσχεδιασμού του Bruscia στο MATLAB/MTTB ως προς τους προσωπικούς τρόπους παιξίματος αλλά και τις μουσικές σχέσεις; 2) Πώς επιδρά η χρήση της κάθε μεμονωμένης τεχνικής αυτοσχεδιασμού στην εμπειρία του συμμετέχοντα ως προς τη μουσική του διασύνδεση, επιρροή και έκφραση; Μέσα από έναν συνδυασμό μουσικής ανάλυσης και ποιοτικής θεματικής ανάλυσης, αναδύθηκαν προοπτικές που σχετίζονται με την αποτελεσματική εφαρμογή και σκόπιμη χρήση της μίμησης, του συγχρονισμού, του κρατήματος και της ρυθμικής γείωσης. Τα μουσικά δεδομένα που δημιουργήθηκαν από το MATLAB/MTTB ανέδειξαν το πώς οι ερευνητές εφάρμοσαν τις τεχνικές αλλά και τις τάσεις παιξίματος των συμμετεχόντων. Επιπλέον, τα ερωτηματολόγια προσέφεραν κατανόηση του πώς η κάθε τεχνική επηρέασε την δυνατότητα του συμμετέχοντα να εκφραστεί και να συνδεθεί, καθώς και την αντίληψή τους ως προς την μουσική επιρροή των ερευνητών. Τα αποτελέσματα

αυτής της μελέτης μπορούν να φανούν χρήσιμα τόσο στους μουσικοθεραπευτές όσο και σε σχετικές μελλοντικές έρευνες.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

αυτισμός, τεχνικές κλινικού αυτοσχεδιασμού του Bruscia, αυτοσχεδιασμός, μουσικοθεραπεία

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ARTICLE

Using Sounds of Intent (SOI) to evaluate the impact of music therapy on girls with Rett Syndrome

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ABSTRACT

In this article, we discuss the importance of music therapy in the development and evaluation of skills in girls with Rett Syndrome. The intention of this study was to collect and analyse data in order to empirically contribute to a mapping of the individual sound-musical development profile of girls with Rett syndrome. The study proceeded with the translation, adaptation, and implementation in the Portuguese context, of a specific music programme, Sounds of Intent (SOI). It was intended to measure target distal, proximal, cognitive and emotional behaviours in girls with Rett syndrome. Longitudinal action research with multiple case-study methodology was carried out, assuming a qualitative nature. This article is focused on the two Rett syndrome case studies that were part of a larger sample with multiple diagnoses. An instrument for data collection was also used, namely matrices of development designed to evaluate this type of intervention and documental analysis process. The results suggest that it is possible to systematically observe and evaluate the development of girls with Rett syndrome over a given period of time through the manifestation of sound-musical behaviour using a programme such as SOI. The data collected through the grid and the concentric profile of the subjects demonstrated a wide variety of sound-musical manifestations throughout the intervention period. Both girls demonstrated different levels of progress with regard to their musical behaviours. The data analysis demonstrated that there was regression and development in the sound-musical behaviours of the clients, both clients showed consistency and high level of involvement during the sessions, sound-musical behaviours have been revealed mostly in the interactive domain and the sound-musical behaviours observed developed towards more complex musical behaviours over time.

KEYWORDS

music therapy,
Rett syndrome,
action research,
case study

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INTRODUCTION

Research has demonstrated that music has a direct relationship with, and influence in, the human body (Gordon, 2000; Sacks, 2008), making it possible, among other things, to evaluate the physical, psychological and emotional growth of the child (Pocinho, 1999). Music can also play an important role in the development of musical and non-musical skills in the child with special needs (Elefant & Wigram, 2005; Nordoff-Robbins, 1965; Ockelford, 2000; Rainee, 2003; Welch, Ockelford & Zimmermann, 2001; Wigram & Backer, 1999).

Music therapy has a relevant role with girls diagnosed with Rett Syndrome. Joining a multidisciplinary approach with other important complementary therapies, music therapy not only provides complementary diagnostic and evaluation information but also facilitates and evokes behavioural manifestations in the individual, contributing to their communication and socio-relational processes (Chou et al., 2019; Elefant & Lotan, 2006; Yasuhara & Sugiyama, 2001). According to Wigram and Laurence (2005), the main direction of music therapy assessment (and treatment) is to develop communicative potential, attention, motivate, and develop functional hand use, social behaviour, and facilitate emotional expression.

The purpose of the research presented in this article was to understand how the sound-musical expression, through the use of a music therapy intervention, contributes to the evaluation, maintenance, and development of competencies, such as musical, cognitive and emotional behaviours, of children with Rett syndrome. This article presents the results of a longitudinal research study centred on the development and evaluation processes of two case studies of clients diagnosed with Rett syndrome through the use of music therapy sessions, using as an assessment instrument the Sounds of Intent (SOI) programme.

LITERATURE REVIEW

Rett syndrome is a rare (0.01%) girl-specific genetic developmental disorder severely affecting physical and mental abilities (Andziule, Aleksien & Lesinskiene, 2018). Rett syndrome has a genetic origin – mutations in the MECP2 gene, which is located on the X chromosome and is responsible for the production of a protein necessary to maintain brain development and functions (Andziule, Aleksien & Lesinskiene, 2018; Chahrour & Zoghbi, 2007; Percy, 2011). This syndrome is characterised by the deterioration of behavioural, social, cognitive, communicative, and functional skills to a profound level.

The development of Rett syndrome is characterised by four stages (IRSA, 1997):

- Stage I (Onset Stage): It appears after a seemingly normal to almost-normal period of development (from 6-18 months). This is the period when symptoms of Rett syndrome may arise, such as the delay in the normal development of gross motor frames. This period is quite short and can last from a few weeks to a few months.
- Stage II (Rapid Destructive Stage): During this period there is a rapid (or, in some cases, more gradual) regression in which the child loses acquired speech and deliberate hand movements. This stage appears between the ages of one to four years, and can last from a few weeks to several months.

- Stage III (Plateau Stage): This phase is long and fairly stable, and can last for many years. Seizures, apraxia, and motor problems are more prominent, but the child seems less irritable, more alert and interested. This is the period when the child may be more receptive to learning. The introduction and development of non-verbal communication strategies will become effective and useful from this stage.
- Stage IV (Late Motor Decay Stage): This period begins at the age of ten and is characterised by reduced mobility and loss of ambulation, but there is no decline in cognitive, communicative, or manual skills and scoliosis is a prominent feature

There is no cure to Rett syndrome, but a treatment provided by several therapies (music therapy, occupational therapy, physiotherapy, speech therapy, and hydrotherapy) seems to relieve and to improve the patient's symptoms (Elefant & Lotan, 2006; Hunter, 1999).

Andreas Rett (1966) noticed that music could break the barrier of difficulties, and at the same time revealed the hidden capabilities of patients with Rett syndrome (Chahrour & Zoghbi, 2007). Also, according to Hunter (2007), individuals with Rett syndrome are particularly fond of music. By using music as their strength, one can contribute to the smoother development and education of these patients, because learning new things is easier when the learning content is presented in an interesting way and the process is engaging (Hunter, 2007). Music helps individuals with Rett syndrome to understand and express themselves in the first place, as well as their surrounding environment and relationships with people (Merker et al., 2001; Trevarthen & Burford, 2001).

Music therapy nonetheless has an exclusive role in the list of therapies for individuals with Rett syndrome. It was recommended by Andreas Rett as a useful intervention for reducing stereotypic hand movements, shortening response time, muscle tension, arousing interest, and stimulating the sensory system (Andziule, Aleksien & Lesinskiene, 2018). Girls with Rett syndrome are sensitive, receptive to musical sounds, able to recognise and associate them with events, so music therapy can be particularly successful in promoting and motivating communication with the social environment (Elefant & Lotan, 2004). A doctoral study designed to investigate intentional communication in this population through the use of songs in music therapy demonstrated that individuals with Rett syndrome could be motivated to communicate and learn when therapeutically employed by a trained music therapist who is familiar with this group of clients (Elefant & Wigram, 2005).

According Andziule, Aleksien and Lesinskiene (2018), the results of an internationally conducted questionnaire survey indicate that the most often-applied and the most effective music therapy methods and techniques for patients with Rett Syndrome include: structured musical games using musical instruments of interesting texture, different timbre, and varying touch pattern; selection of songs and instrumental music pieces using pictures or other symbols; listening to songs or short instrumental pieces and motivating a child to purposefully fill in a pause with a musical instrument or to clap hands when a basic beat is heard, or the like. These music therapy methods are indicative, aiming at functional use of hands and strengthening of other motor skills; also an improvement of non-verbal communication and experiencing joy and pleasure. The music therapists' survey did not prove the hypothesis on the applicability/suitability of improvisational music therapy methods for the reduction of stereotypic hand movements.

Research has proved music therapy to have a positive effect in improving these children's capacity for social and preverbal skills such as initiative, response, imitation, vocalisation, and turn-taking (Aldridge, Gustorff & Neugebauer, 1995; Bunt, 1994; Edgerton, 1994; Elefant, 2002; Müller & Warwick, 1993; Oldfield, 2003; Plahl, 2000). Besides intensive research and findings about Rett syndrome over time, there is no known remedy that can repair the genetic fault of Rett syndrome. Some medical solutions have succeeded in alleviating symptoms connected to Rett syndrome during pre-, peri-, or postnatal periods, and subsequent medical treatment that will improve the physical condition and the functional abilities in this population (apart from the anti-epileptic medication for patients with seizure symptoms) (Elefant, 2002). However, different types of therapy are likely to be very important for any potential improvement, and even the slowing of deterioration (Elefant, 2002). Some researchers believe that knowledgeable therapy might change the course of Rett syndrome (Jacobsen, Viken & von Tetchner, 2001).

Music therapy has a relevant role with girls diagnosed with Rett syndrome, joining a multidisciplinary approach with other important complementary therapies. The inclusion of this type of intervention in multidisciplinary teams not only provides complementary diagnostic and evaluation information, but also facilitates and evokes behavioural manifestations in the individual, contributing to their communication and socio-relational processes.

The SOI programme

The Sounds of Intent (SOI) programme provides a curricular basis for planning which allows for evaluating the results and progress of sound-musical behaviours in children and youngsters with special educational needs (SEN) (Cheng, Ockelford & Welch, 2009). The programme consists of three domains of musical involvement (Reactive [R], Proactive [P], and Interactive [I]) that are presented through a series of concentric circles (Figure 1). In particular, the reactive domain corresponds to the ability to listen and respond to musical stimuli; the proactive domain denotes causing, creating, and controlling music and sound-musical instruments; the third dimension of the concentric frame, the interactive domain, concerns the ability to communicate and dialogue, to hear sounds and produce them together with other element(s) (Ockelford, 2008).

The SOI programme identifies six major success levels as key elements for the recognition and understanding of the musical development that children with multi-deficiency are prone to follow. The programme is based on the typical characteristics of early musical development, to map the structure of the SOI programme (Cheng, 2010).

Each domain has six levels to depict different levels of achievement, involvement, or experience, and to illustrate the important contingent relationships between them.

The SOI framework attempts to portray "[…] the notion of growth/development as a small inner core for a wider and more external world" (Ockelford, 2008, p.81). This idea is portrayed in the concentric frame of musical development and evaluation that the programme features. For each level (one to six), in each domain (R, P, I), there are four back elements (A, B, C, and D) that serve as examples for the researcher to identify various sound-musical relevant information.

SOI users can assess and measure levels of involvement and consistency of participants within each element of the SOI structure over a period of time. This process allows observing the evolution of the participant in each SOI element.

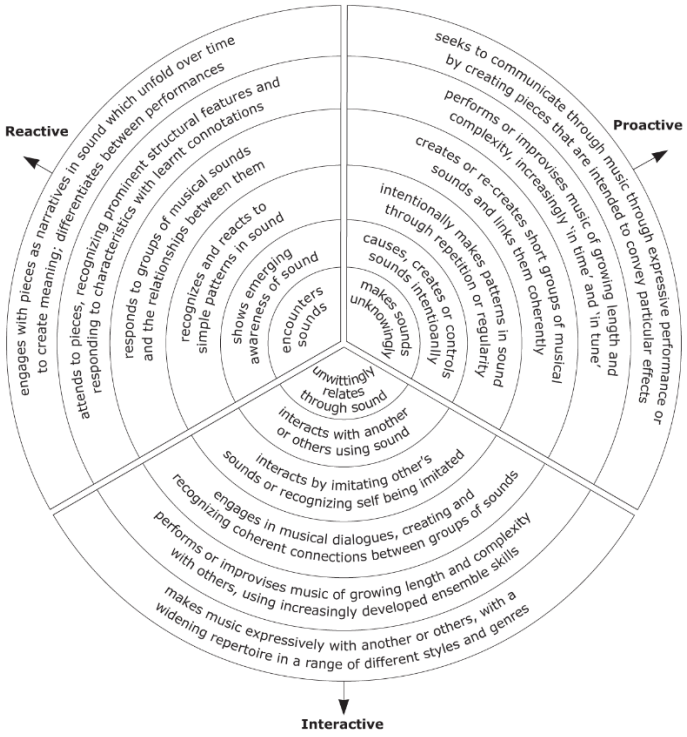

Figure1: Concentric frame for evaluation and development of the SOI programme (Ockelford, 2008, p. 393)

METHOD

Design and data

The research question of the present study was: How can the sound-musical expression, through a music therapy intervention, contribute to evaluation, maintenance and development competencies such as musical, cognitive, and emotional behaviours of children with Rett syndrome?

In this way, the SOI programme was implemented in music therapy sessions for the evaluation of skills and sound-musical development over a period of 23 weeks of intervention (this period was chosen according to the school-year calendar) in order to evaluate the musical, socio-relational, motor, and communicational behaviours in two girls diagnosed with Rett syndrome. Musical improvisational techniques were used, such as playing, vocalising, and singing traditional children's songs that were relevant to each participant.

The aim was to develop the following methodological approaches:

a) In a theoretical dimension, implement the SOI programme in order to get answers to the questions asked;

b) Use a case-study approach, through the action-research method, with incorporated fieldwork, which focuses on the musical behaviours observed and the development and evaluation during a period of 23 weeks, allowing a descriptive and comparative analysis between the participants.

The present study adopted a qualitative research approach, focusing on the experience and the subjective outcome of the participants. The researcher was an active participant in the context of the research, becoming an active part of the observed field.

Action research was the methodology applied, due to the character and design of the research as a systematic, practice-oriented process. The action occurred on a realistic level and was always followed by a self-critical and objective reflection and evaluation of the results, based on the triangle: action, research, and training (Kember, 2000; McNiff, 2002; Zuber-Skerrit, 2005).

The technique adopted for the data-elaboration process was content analysis (Bardin, 1977; Bogdan & Biklen, 1994). The main sources of data collection on both case studies were based on fieldwork, school context, weekly observations, audio and video recordings; interviews with teachers and technicians from the multidisciplinary team; information obtained through the diagnosis reports and school documentation about the clients; a survey about the sonorous identity (Benenzon, 1985) of each client.

In the present research, the process of data collection and analysis of the case studies is performed in a systematic way. The design of the case studies is based on the theoretical and methodological orientation of the SOI programme, through the use of the evaluation frameworks and grids that register the evolution of the different subjects' behaviours during the 23 weeks of the intervention. The specific techniques used for the analysis of the case studies were the analysis of the development profile of each client, temporal analysis, the development of the client over time, as well as a comparison with data obtained through the grids and tables of evolution and development.

Participants and consent

The sample consists of four-year-old twin girls with Rett syndrome who attended a private Structured Teaching Unit (UEE), in Lisbon, Portugal. Both clients had several co-morbidities associated with their diagnosis, such as epilepsy, spasticity usually associated with muscle weakness and dystonia, respiratory dysfunction, hyperventilation, language and communication impairments (they are non-verbal), motor impairment, stereotypies, socio-relational, emotional, and hand-functional disturbances. The clients also attend other complementary therapies weekly, such as physiotherapy, occupational therapy, and hydrotherapy. The study was approved by the scientific committee of the Instituto Superior de Psicologia Aplicada.

CASE STUDIES

The two girls had individual music therapy sessions during the 23-week intervention period. The sessions occurred once a week, with a duration of 30-45 minutes for each participant. The interventions occurred in the same context, an educational context, with the same music therapist.

The assessment instruments used where the SOI programme instruments, which included the concentric frame, a session form (which evaluated the receptive, proactive and interactive behaviours of the clients in a quantitative way) and a registration form, (where the behaviours observed in every session where registered in a qualitative way). The data obtained throughout the 23 sessions were also collected through the use of a camera, which provided greater acuity of analysis of the session and the behaviours observed. The collected data were extracted by the music therapist.

The sessions had the same structure: introduction (“Hello song”), development and conclusion ("Goodbye song"). The music therapist used musical improvisational techniques; playing, vocalising, and singing songs that were relevant to the musical sonorous identity (ISO; Benenzon, 1988) of each participant.

Various sound-musical materials were used, selected according to the interest shown by the clients. In the sessions, a piano, an acoustic guitar, several Orff instruments (clubs, castanets, Chinese box, reco-reco, xylophone, shakers, maracas, tambourines), bells, drums, ethnic percussion instruments, an ocean drum, a rain stick, a microphone and a cajón were used with both clients. In the setting, there are also cards with augmentative communication images, some of which are personalised to each client, which are associated with moments, objects, people, and feelings.

The levels of involvement and consistency of the musical behaviours of each participant were also being evaluated in each session, through the use of a camera and the collecting of data later on. The intervention took place in an educational setting. The intervention space was a room with abundant natural light. The floor was cushioned with foam plates. There was a rectangular table for children and two chairs in a corner of the room. The researcher (first author) had the role of active participant.

Case study M

At intervention initiation, M was four years old. The social-relational area seems to be a strong area in M. In the sessions (session 1 to 23), M reveals herself to be very expressive and empathic, especially with eye gaze, relating and being musically with the therapist. Guitar and singing are facilitators of this process since they arouse great interest and curiosity in M. M did not show great interest in exploring and discovering the various instruments available in session, focusing and becoming fascinated only by the guitar, despite several attempts to introduce new and different sonorities. The guitar has been mediating the relation of M with the therapist, since it provides processes of socio-relational activation. The level of involvement of M, both in relation and in music, is total; concentrating during the entire music therapy session (30 to 45 minutes). With regard to the cognitive aspect, the expressiveness of M allows the possibility of recognising the positive and negative responses to the musical activities. M communicates through motor activation, facial and vocal expression, and sometimes through the triggering of stereotypy (as a way of communicating excitement or feelings of anxiety).

She shows intentional will and attempts to vocalise sounds and participation in musical dialogues through songs. She recognises known and already-sung songs, and there is physical activation in M when this happens. M carefully observes and listens to the musicality being played and sung. She easily engages and "requires", vocally, more rhythm or intensity.

In the start of the therapy, M already sang in question-answer mode, without delay, emitting vowel sounds (/ and / / a / / i / / mmm /); recognises and temporarily identifies the sequence of actions in the songs as well as body parts (e.g., clapping, wiggling, singing, dancing). Currently, she has some delay in the corporal response and, sometimes, incapacity in the vocal response, despite the effort and visible intentionality. M effectively differentiates the singing from the speech in her tone of voice.

M does not associate the images of the songs with them, nor does she demonstrate the autonomy to choose what to sing in the sessions. However, her involvement in the process is total, being always in relation and visual contact with the therapist and with the music.

Regarding the motor aspect, M particularly likes to clap hands. In some songs, with enthusiasm, she claps of her own accord and likes it when others clap. There is a process of motor and relational activation with the songs "Hello M," "The Cat," "The Ball," and songs created/improvised about/with M. During the session, when she feels like it, she gets up alone to go dancing, later needing help to sit down. She presents stability and some balance, being able to differentiate dance/balance for a few minutes).

Profile of M

According to the data obtained through the application of the instruments, it is possible to verify M's sound-musical profile. Through the sound-musical behaviours manifested by M and classified in the respective domains (reactive, proactive, and interactive) it is verified that M mainly reveals sound-musical behaviours in the interactive domain. Her level of involvement is high, mostly at level 5; and the sound-musical behaviour of M shows some consistency, assessed between level 3 and 4.

M interacts with others through sound, and it is in this parameter that more of the same behavioural observations are recorded throughout the intervention period. The client finds herself developing the notion of the "I" and the "other" through sound, eventually occurring during a period of interaction between M and the music therapist.

M makes sounds in response to sounds produced by the "other." Her form of response is through vocalisation. She never resorts to musical instruments. Her expression and form of communication are essentially corporeal; through eye contact, body movement, stereotyping, and vocalisations. She likes to hear singing and to sing; easily engaging in what is happening at a certain musical-sounding moment.

Overall, data analysis demonstrated that there was regression and development in the musical behaviours of M in the three domains. However, two domains, reactive and proactive, showed progress in the musical behaviour of M in the final period of the intervention.

In the reactive and interactive domains, the musical behaviours observed in M moved towards more complex musical behaviours, with a regression to the manifestation of simpler musical behaviours from the fifteenth session until the end. The level of sound-musical behavioural consistency presented by M in the reactive, proactive, and interactive domains during the 23 weeks of intervention was on level 1 in the first two sessions. In the remaining sessions, it oscillated between levels 3 and 4 (on a scale of 1 to 5). It was in the interactive domain that the highest levels of sound-musical behavioural consistency were recorded. The levels of M's involvement were always high in all three domains.

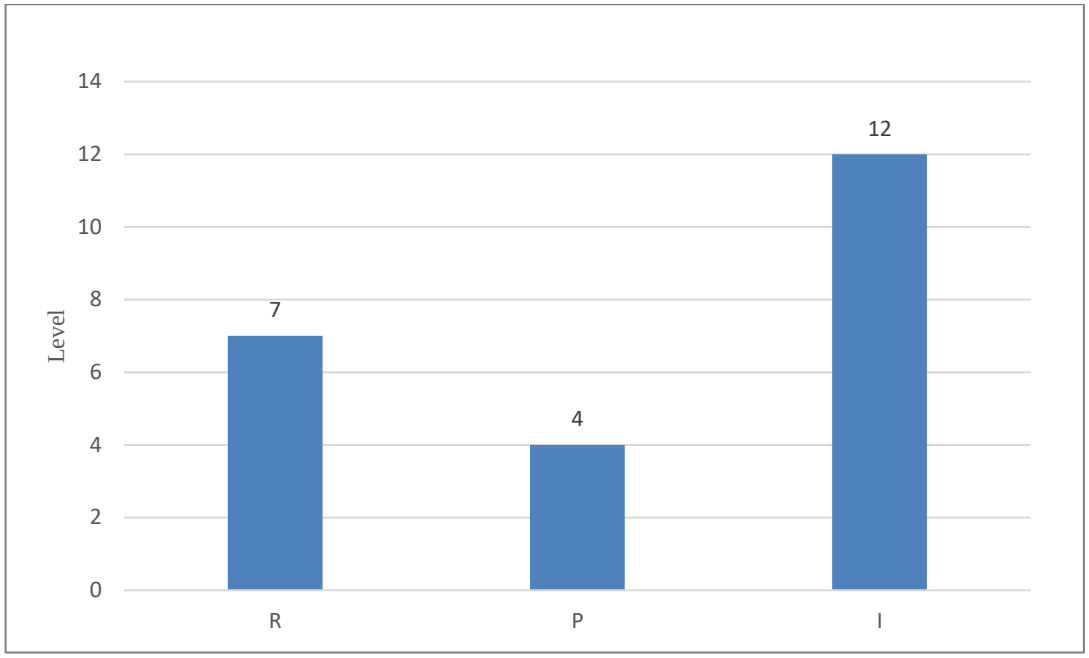

Figure 2: Sound-musical behavioural observations of M recorded in the reactive (R), proactive (P) and interactive (I) domains, during the 23 weeks of research.

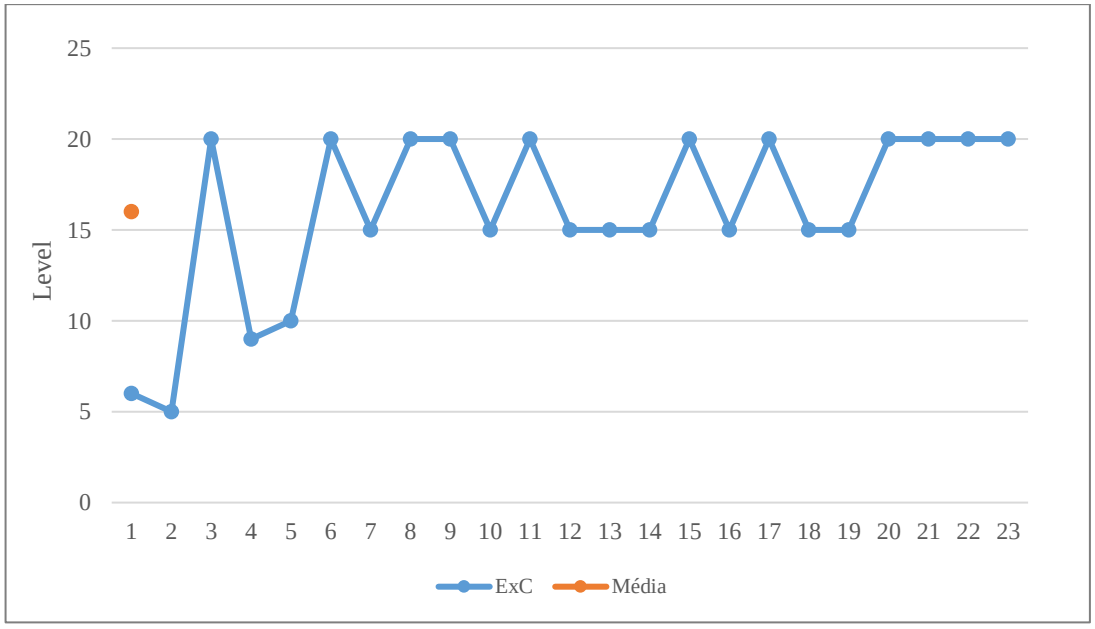

Figure 3: Chart corresponding to the measure (minimum score = 0 and maximum = 25) of the levels of consistency and sound-musical involvement of M (consistency level (C) x level involvement (E)), over 23 weeks of intervention.

CASE STUDY L

L was four years old. During the sessions, eye contact has increased in quantity and duration, albeit temporarily. In sessions, L engages in music, relates to, and interacts with, the other through the exploration of vocal singing, stories/sung jokes, and the musical game of question-answer. She emits

vocalisations, although currently less. This decrease can also be associated with growth and, as such, greater awareness and sound consciousness on the part of L. She manifests her musical preferences during the session, through motivation, vocalisation, and participation. These behaviours are associated with hand-stimuli increase, stereotypies, body, and leg movement. In the last weeks of the intervention period, L's involvement decreased, and the level of concentration became shorter. She was emotionally more sensitive, and that emotional state was transmitted through different kinds of vocalisations, so the session format and dynamic were slightly altered.

Regarding the cognitive aspect, the facial and vocal expressiveness of L allows the recognition of positive and negative responses to musical activities. L communicates through body activation, facial expression, vocalisation and sometimes the triggering of stereotypy.

She shows intentional will, attempts to vocalise sounds and participates in musical dialogues through songs. She recognises known songs, and there is a positive body response in L when this happens. The sessions with L have different sound dynamics throughout the session.

L temporarily focuses on the action but after a while loses interest and complains. Although she participates in the songs, showing understanding and learning competencies in a cognitive way (for example, in songs with sequential actions, clapping hands, identifying parts of the body), sometimes she shows an 'apparent' disinterest during the session.

At motor level, in some songs, L enthusiastically claps her hands in an intentional way and likes when others do it too. She also dances. There is an increase in her body movement. It is possible to differentiate the stereotypy of the intentional movement. She likes to have the freedom of her body to dance and to move around the room to the rhythm of the music. She has instability and motor imbalance. During the session, she rises alone from her chair to go dancing.

L presents strong stereotypies (clapping), and bites her hand in moments of greater insecurity and excitement. The intervention took place in the same space as the sessions of the M case study.

Profile of L

According to the data analysis, through the use of the instruments of analysis, it is observed that L reveals a profile with sound-musical behaviours manifested essentially in the proactive and interactive domain. Despite her non-verbal communication, communicative and relational sound-musical behaviours were observed.

The levels of involvement and consistency in the musical-sound behaviours manifested by L, throughout the intervention, are significant, at level 4. The sound-musical expression provided L an alternative way of communicating and expressing her intentions, a complementary form of communication and development resource in the work with L.

A developmental and cognitive evolution was observed regarding intentionality as, initially, the register of behaviours, which were essentially reactive to a stimulus, would, from the fifth session on, appear to be intentional manifestations on the part of L in the proactive domain.

Her instrument is the voice; using sound vocalisation to respond, whether intentionally or reflexively, to the therapist. Percussion instruments are used, but not on her own initiative. She likes to move around the room (also as a form of energy-channelling, given the stimuli she is receiving) during the sessions, instead of sitting. Her muscular tone still allows it, despite the imbalance. She

does not make eye contact many times, two to three times per session and during a short period, but "is" in the session.

On the scale of 0 to 25, her level of involvement and consistency in sound-musical manifestations is 16. Overall, data analysis demonstrated that there was some progression in the musical behaviours of L in the three domains. The proactive and interactive domains showed progress in the musical behaviour of L in the final period of the intervention. The musical behaviours observed in L developed towards more complex musical behaviours in the three domains. Levels of involvement and consistency remained high throughout the intervention period.

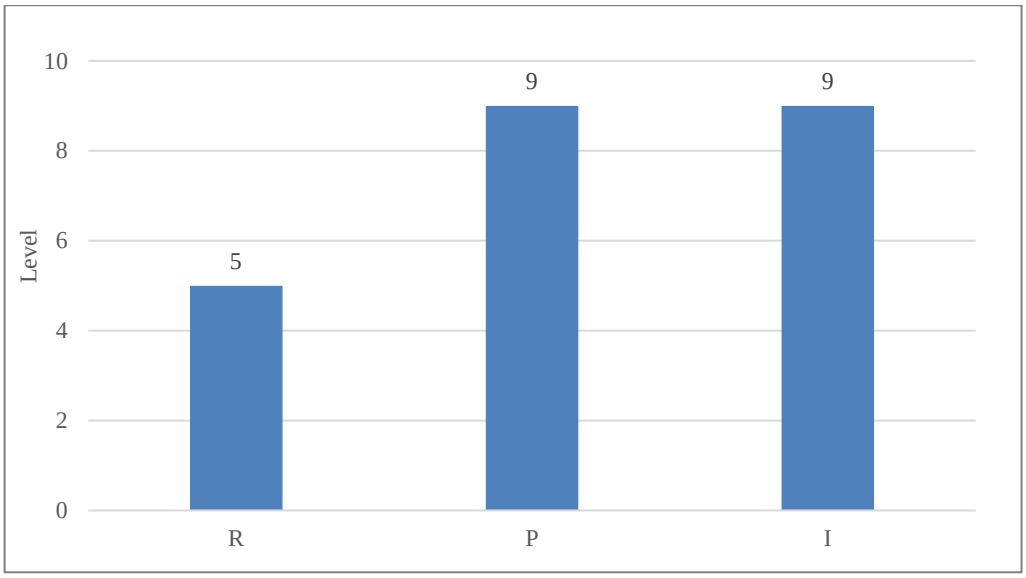

Figure 4: Behavioural observations of L recorded in the reactive (R), proactive (P) and interactive (I) domains, during the 23 weeks of research.

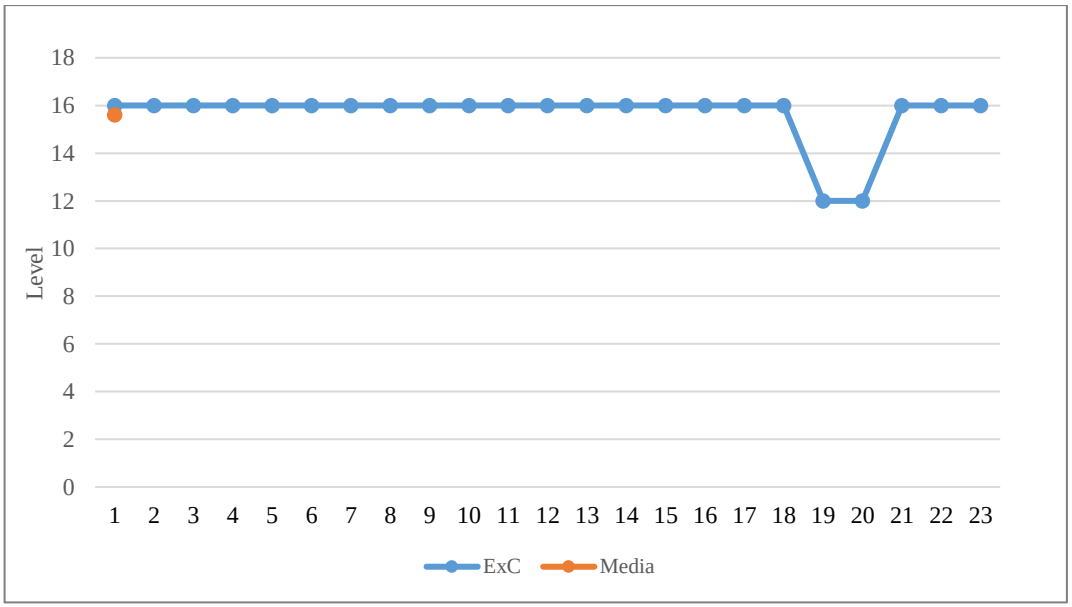

Figure 5: Correspondence frame (minimum score = 0 and maximum score = 25) of the levels of consistency and sound-musical involvement of L (level of consistency (C) x level of involvement (E)), over 23 weeks of intervention.

DISCUSSION

The research question of the present investigation was: How can the sound-musical expression, through a music therapy intervention, contribute to evaluation, maintenance and development competencies such as musical, cognitive, and emotional behaviours of children with Rett syndrome? Data analysis shows that the use of music and the sound-musical expression in children with Rett syndrome can contribute to the development, maintenance and evaluation of competences and sound-musical behaviours. It may also encourage intentional processes of verbal and non-verbal communication, motor, cognitive and socio-relational skills, as well as records of development in the behaviours of the participants, at the level of expressive and receptive communication. It was possible to verify indices of development in the sound-musical behaviours of the subjects as well as the maintenance of competences.

In this study, major findings suggest that it is possible to evaluate, maintain and develop skills in children with Rett syndrome, through the sound-musical expression and the use of the SOI programme. Demonstrations of reactive, proactive and interactive behaviours, closely related to areas of cognitive, motor, communicative and socio-relational development, were evolved and evaluated.

In conjunction with Sigafoos' analysis (2000), all behaviours can be defined as non-conventional forms of communication, and as a form of "Potential Communicative Act." As the majority of individuals with Rett Syndrome are not verbal communicators, some information can be drawn from their emotional and physical behaviours (Elefant, 2002).

Elefant (2002) categorises the Rett syndrome behaviours by dividing them into three sections: emotional, communicative, and pathological.

1. The emotional behaviours can be categorised as smiling, laughing, frowning, crying, moaning, shouting, and vocalisation;
2. The communicative behaviours can be categorised as body movement (rocking), leg movement, eye contact, looking away, eye shifting, closure of eyes, leaving the seat, walking towards exit door, returning to seat, leaning forward, leaning back, pushing picture symbols away, leaning hands on researcher, putting leg on researcher, and opening/closure of mouth;
3. The pathological behaviours can be categorised as hand movement, teeth-grinding, and hyperventilation. Change in facial colour could fall into either pathological or emotional behaviour, depending on whether it reflected raised anxiety or raised excitement respectively.

In this research, the SOI programme analysed the sound-musical behaviours, which evaluated and developed the emotional and communicative abilities through sound-musical expression and, at the same time, allowed the analysis of the pathological behaviours from a receptive, proactive, and interactive perspective. The fact it is an instrument with the purpose of evaluating a client through his or her sound-musical behaviours and intent makes it accessible in the assessment of clients with non-verbal communication and with diagnoses of neurodevelopmental disorders. The possibility of verification, through the concentric grid, of the predominant pattern of the patient's development over a period of time is a useful tool in the evaluation and perception of the behavioural tendency of the patients. It also allows reflection and analysis of the behaviours observed in each session (through registration in session forms, concentric grid and video-viewing) and not only after a certain period of

time, or in the end of the intervention. The SOI programme contributes in a relevant way to a consolidation and perception of the evolution of the patients' development. The SOI programme also functioned as a continuous aid in training the technician, providing practical suggestions for intervention in the context with clients.

It was apparent from the findings of this research that both girls from the case studies improved their abilities over time. This finding has also been reported in previous research with Rett syndrome population (Elefant, 2002; Wigram, 1995). Due to repetition and practice, it is evident that abilities (after being achieved) can be sustained over periods of time (Elefant, 2002). According to the literature (Elefant, 2002; Wigram, 1995; Yasuhara & Sugiyama, 2001), it is suggested that music, and songs in particular, have an important role in revealing such potential in a population that until not long ago was thought of as uneducable, considered as mentally weak, and with pre-intentional communication.

In this research, it was interesting to observe the way that the girls intentionally and consistently (consciously or unconsciously) moved their body to indicate a communicative act or response to the stimuli. This happened during songs, especially favourite songs, through excitement behaviours and an increase of the hand-movement stereotypy as well as a change in breathing patterns (to hyperventilation). Sigafoos et al. (2000) also noted that the girls in their study exhibited high levels of eye-gaze, hyperventilation, and stereotypical hand movements. These behaviours occurred during social interaction moments. Their findings are similar to the ones in this study. This behaviour is presented in other literature on Rett syndrome (Lindberg, 1991; Hunter 1999), suggesting that in this population stereotypical hand movement may represent inner feelings.

The eye contact during musical interaction coincides with Wigram's (1991) and Elefant's (2002) reports, where they mention that girls maintain very good eye contact during music therapy sessions.

The girls' emotional responses were reflected in their behaviour through excitement, laughing, increase of body movement, and vocalisation. These emotional responses coincide with Latchford (in Trevarthen & Burford, 1995) and Elefant (2002), who implied that even severely impaired children react appropriately by smiling and laughing when being joked with or teased. Despite the disability, they are left with some level of intact emotions at a subtle level.

One of the emotional responses is made through vocalisation. In this study, the girls reacted through vocalisation in an alternative way (Stern, 1975). It is curious to note that the vocalisation never/rarely occurred coactively (singing together at the same time). Instead, the girls were always focused on the therapist when she sang. One of the girls, M, always seemed to be concentrated and focused while hearing the songs (favourite ones or new ones). Silent moments where considered to be very important, giving the girls the space and time that was needed for them to have the initiative to start to vocalise. According to Elefant (2002), in order to enhance vocalisation, it is recommended to give ample space and time for the girl to respond either in pre-composed songs or in improvised activities.

Elefant (2002) had similar findings in her study and mentioned Clair (1996, in Elefant, 2002), who also reported identical findings in a study with the population of senile dementia. In that study, the participants kept quiet whenever the researcher was talking or singing, and initiated verbalisation only when there was silence. Elefant (2002) emphasises that, with an attentive cooperative child, a good rapport between child and researcher, a familiar situation, and strong motivational factors will facilitate positive outcomes.

CONCLUSIONS

The research literature (Elefant, 2002; Wigram, 1995; Yasuhara & Sugiyama, 2001) shows that it is important to identify emotional reactions and different behaviours that can be interpreted as communicative attempts. Recognition of these behaviours and understanding their intended meaning will increase shared understanding. According to Sigafoos et al. (2000) and Elefant (2002), there is also a danger that when a child's needs and wishes go unrecognised, withdrawal or more problematic behaviours might appear.

This research showed intentional, emotional, communicative, and social behaviours from girls with Rett syndrome, manifested through sound-musical stimuli. Similar pieces of evidence were also found in previous research. Further research is needed in order to support theoretical fundaments on music therapy intervention with this population.

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Ελληνική περίληψη | Greek abstract

Η χρήση του Sounds of Intent (SOI) για την αξιολόγηση της επίδρασης της μουσικοθεραπείας σε κορίτσια με σύνδρομο Rett

Ana Rita Maia | José Morgado

ΠΕΡΙΛΗΨΗ

Σε αυτό το άρθρο συζητάμε τη σημασία της μουσικοθεραπείας στην ανάπτυξη και την αξιολόγηση των δεξιοτήτων κοριτσιών με σύνδρομο Rett. Σκοπός αυτής της μελέτης ήταν η συλλογή και η ανάλυση δεδομένων με στόχο την επίτευξη μιας εμπειρικής χαρτογράφησης του ατομικού προφίλ της ηχητικο-μουσικής εξέλιξης των κοριτσιών αυτών. Η μελέτη προχώρησε στη μετάφραση, την προσαρμογή και την υλοποίηση ενός συγκεκριμένου μουσικού προγράμματος, του Sounds of Intent (SOI), στην Πορτογαλία. Η έρευνα αποσκοπούσε στο να μετρήσει την απόκλιση από τους στόχους, την εγγύτητα και τις γνωστικές και συναισθηματικές συμπεριφορές κοριτσιών με σύνδρομο Rett. Η έρευνα που πραγματοποιήθηκε είχε ποιοτικό χαρακτήρα: πρόκειται για μια έρευνα διαχρονικής δράσης με πολλαπλές μεθοδολογίες μελέτης περιπτώσεων. Αυτό το άρθρο επικεντρώνεται στις δύο περιπτωσιολογικές μελέτες κοριτσιών με σύνδρομο Rett που αποτελούν μέρος ενός μεγαλύτερου δείγματος με πολλαπλές διαγνώσεις. Επιπλέον, ως εργαλείο συλλογής δεδομένων χρησιμοποιήθηκαν οι αναπτυξιακές μήτρες [matrices of development] που αποσκοπούν στην αξιολόγηση αυτού του είδους της παρέμβασης και της διαδικασίας τεκμηρίωσής της. Τα αποτελέσματα υποδεικνύουν ότι η συστηματική παρακολούθηση και αξιολόγηση της ανάπτυξης των κοριτσιών με σύνδρομο Rett σε μια δεδομένη χρονική περίοδο είναι εφικτή μέσω της εκδήλωσης της ηχητικο-μουσικής συμπεριφοράς τους όπως αυτή καταγράφεται με ένα πρόγραμμα όπως το SOI. Τα δεδομένα που συλλέχθηκαν μέσα από μια πλεγματική και ομοκεντρική σκιαγράφηση/προσέγγιση του προφίλ των υποκειμένων έδειξαν μια ευρεία ποικιλία ηχητικο-μουσικών εκφάνσεων καθ' όλη την περίοδο παρέμβασης. Όσον αφορά τις μουσικές τους συμπεριφορές, και τα δύο κορίτσια παρουσίασαν διαφορετικά επίπεδα προόδου. Η ανάλυση των δεδομένων έδειξε ότι υπήρξε παλινδρόμηση και ανάπτυξη στις ηχητικο-μουσικές συμπεριφορές των πελατισσών, ενώ αι οι δύο πελάτισσες έδειξαν συνέπεια και υψηλό επίπεδο συμμετοχής κατά τη διάρκεια των συνεδριών. Οι ηχητικο-μουσικές συμπεριφορές τους αναδείχθηκαν κυρίως σε διαδραστικό επίπεδο και εξελίχθηκαν σε πιο πολύπλοκες μουσικές συμπεριφορές με την πάροδο του χρόνου.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

μουσικοθεραπεία, σύνδρομο Rett, έρευνα δράσης, μελέτη περίπτωσης

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ARTICLE

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

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ABSTRACT

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

KEYWORDS

autism,
forms of vitality,
microanalysis,
music therapy
transcription

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

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

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

Between the essence
And the descent
Falls the Shadow

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

INTRODUCTION

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

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

THEORETICAL BASES

The theory of 'forms of vitality'

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

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

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

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

Music therapy model of reference

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

Other theories of reference

Theory of attachment

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

Neurosciences

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

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

METHODS OF ANALYSIS

Relevance of the theory of forms of vitality

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

Musical transcription and microanalysis

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

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

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

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

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

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

R.'S CLINICAL MUSIC THERAPY JOURNEY

The client

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

Global picture and objectives

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

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

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

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

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

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

Phase 1: a cycle of endurance training

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

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

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

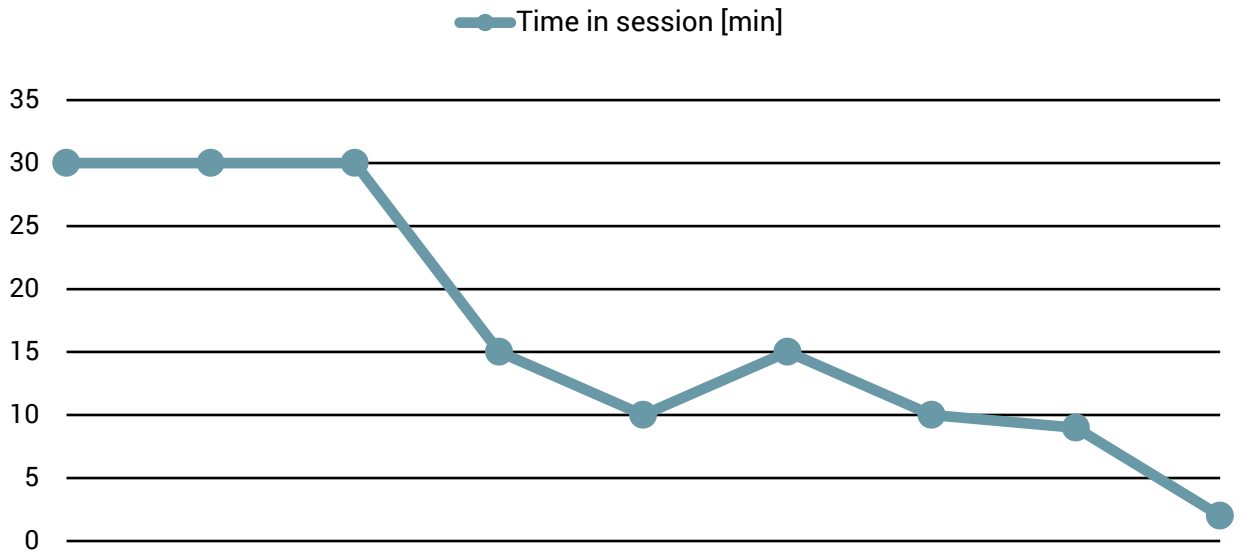

Figure 1: R.'s permanence in the setting for her first 9 music therapy sessions

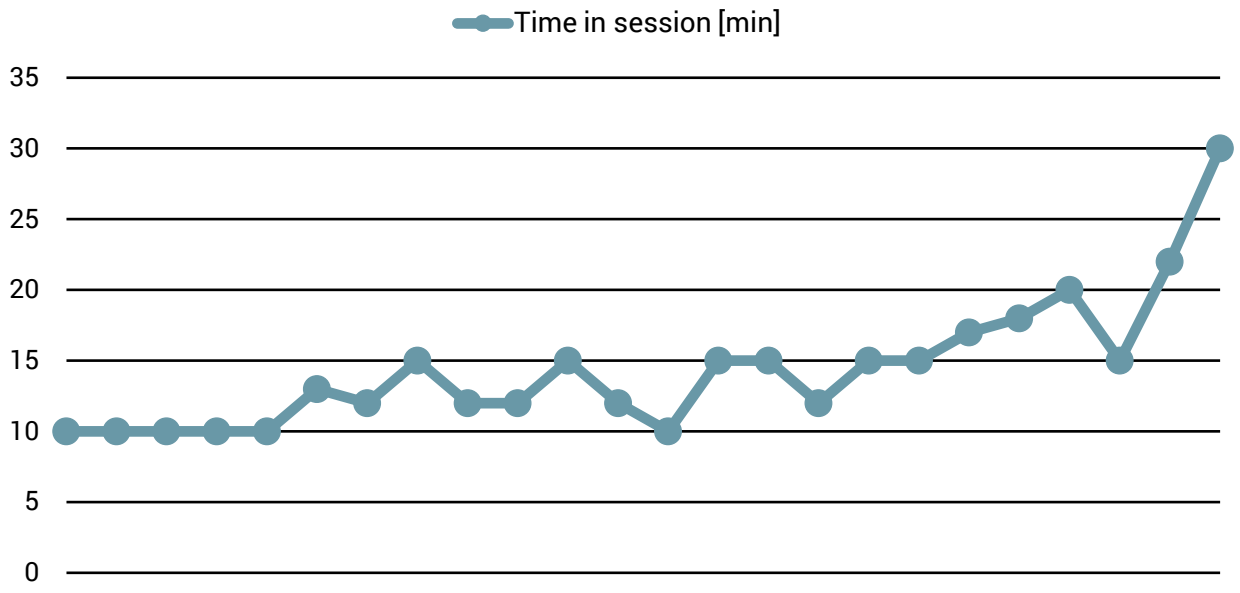

Figure 2: R.'s permanence in the setting for the 24 sessions with an educator present (sessions n. 10—33)

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

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

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

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

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

Example of music from this phase

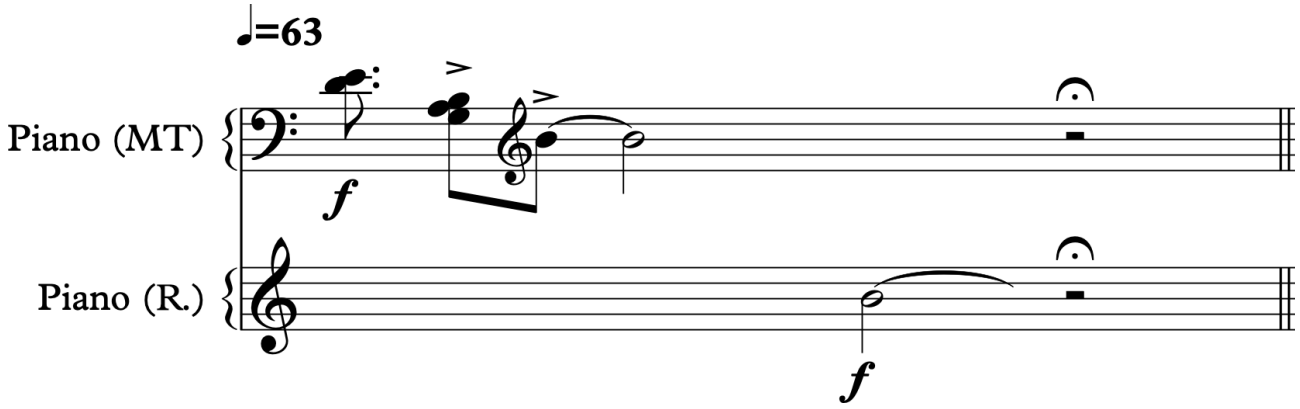

Figure 3: Excerpt from a digital piano improvisation

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

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

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

Data interpretation

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

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

Phase 2: in search of the self

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

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

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

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

Analysis of the forms of vitality from this phase

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

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

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

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

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

Examples of music from this phase

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

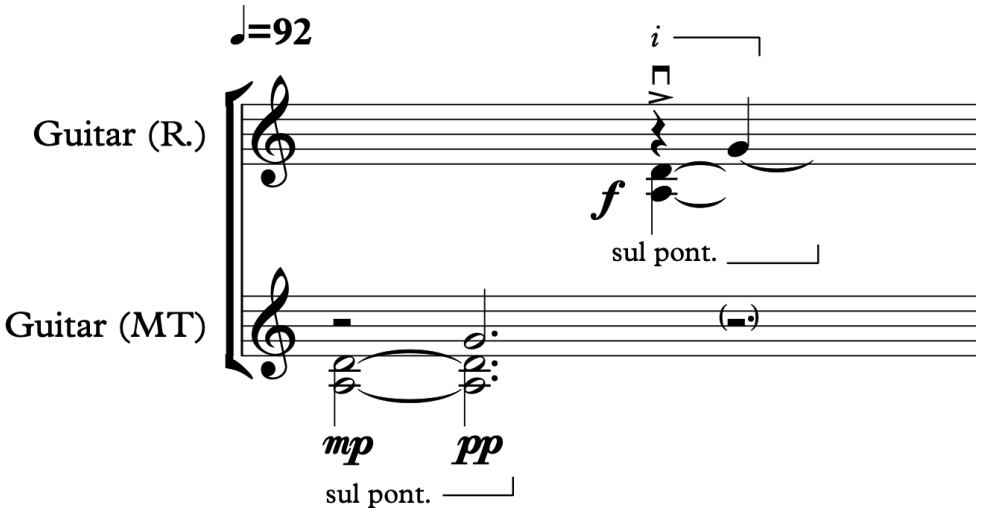

Figure 4: Excerpt of a guitar improvisation

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

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

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

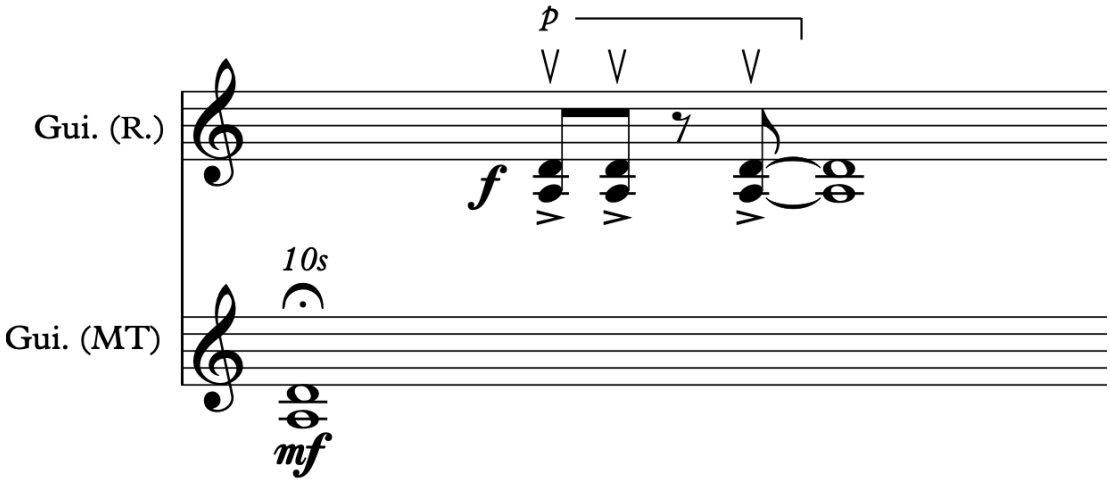

Figure 5: Excerpt of a guitar improvisation

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

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

Data interpretation

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

Putting it all together: The current work path

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

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

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

ADDITIONAL MUSIC TRANSCRIPTIONS ANALYSIS WITH FORMS OF VITALITY

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

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

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

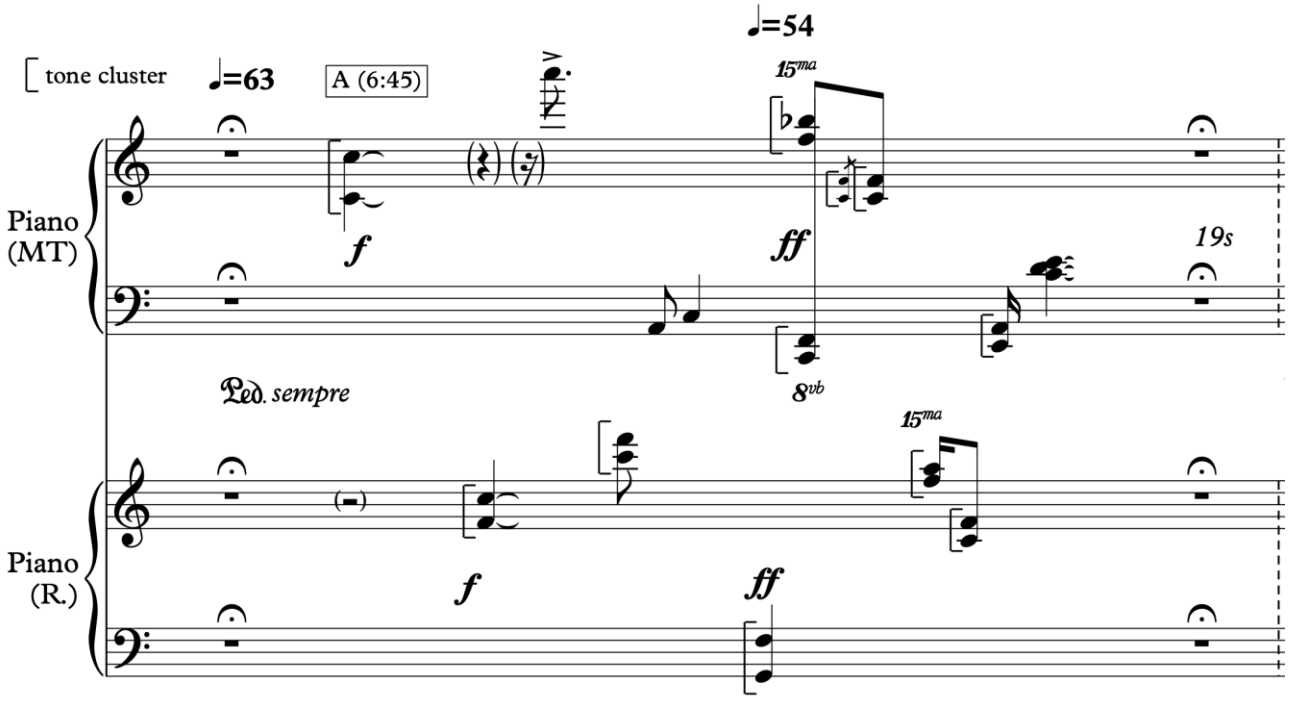

Figure 6: Section A of transcription (17th February 2017)[2]

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

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

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

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

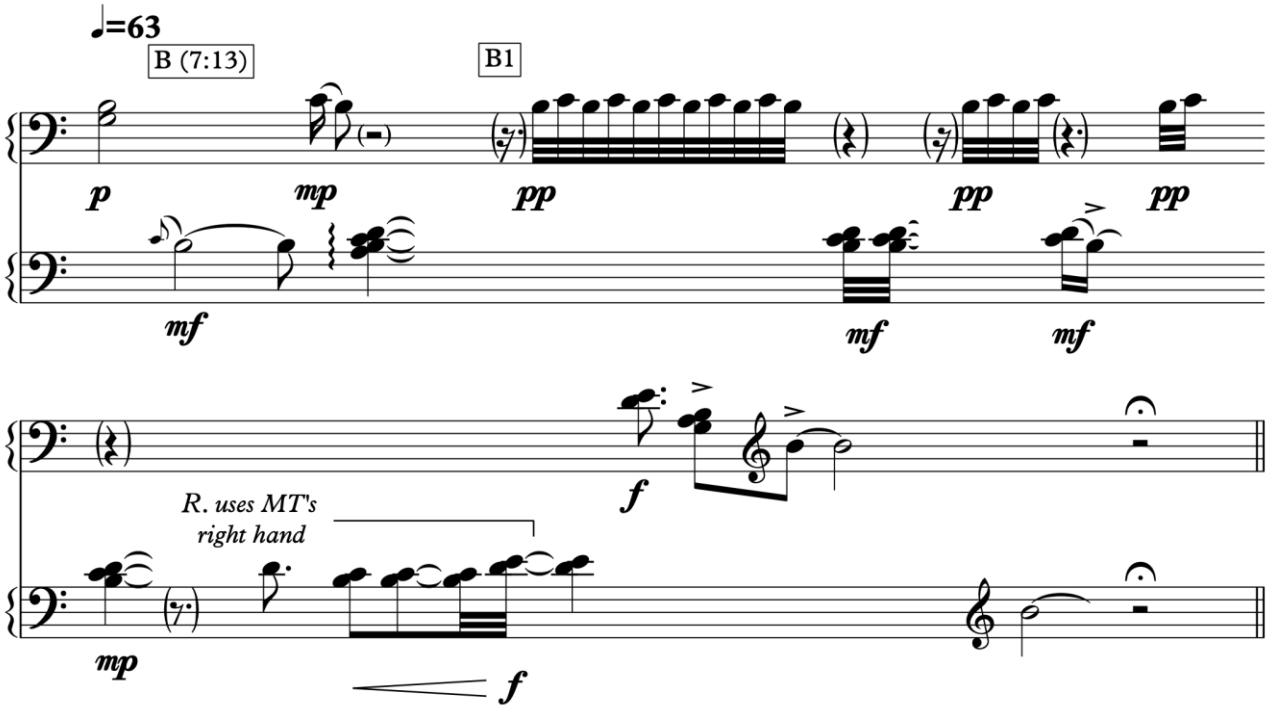

Figure 7: Section B of transcription (17th February 2017)

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

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

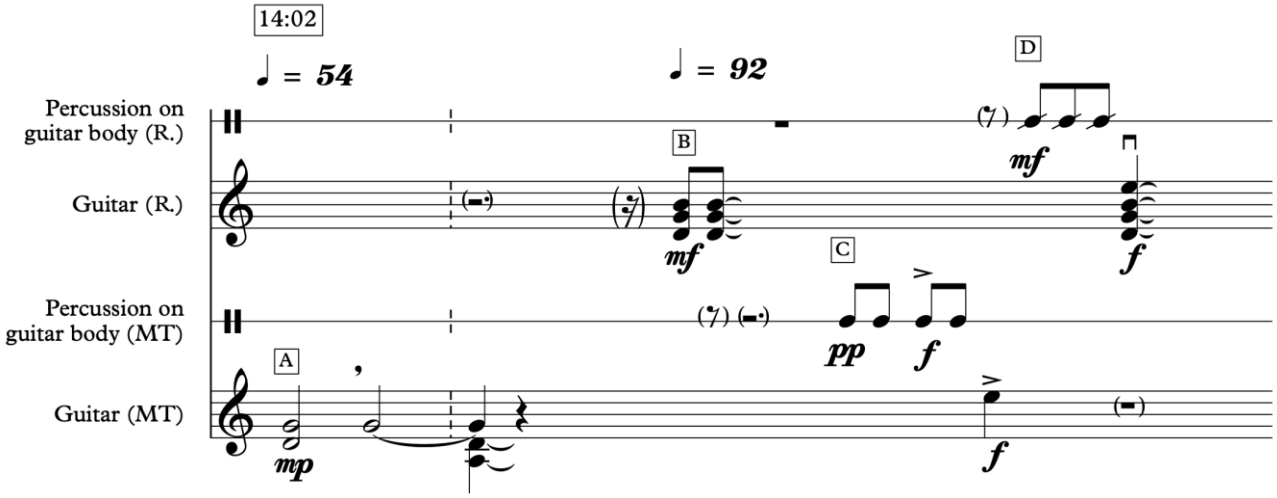

Figure 8: Sections A-D of transcription (27th October 2017)

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

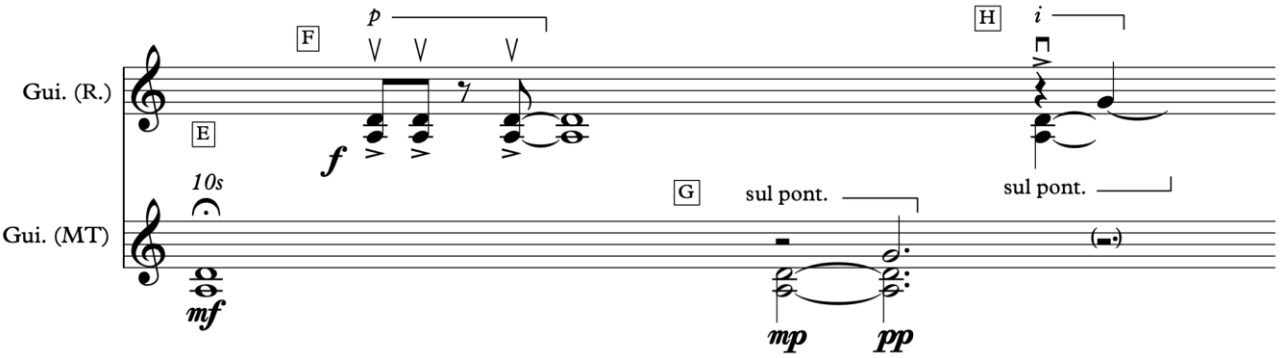

Figure 9: Sections E-H of transcription (27th October 2017)

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

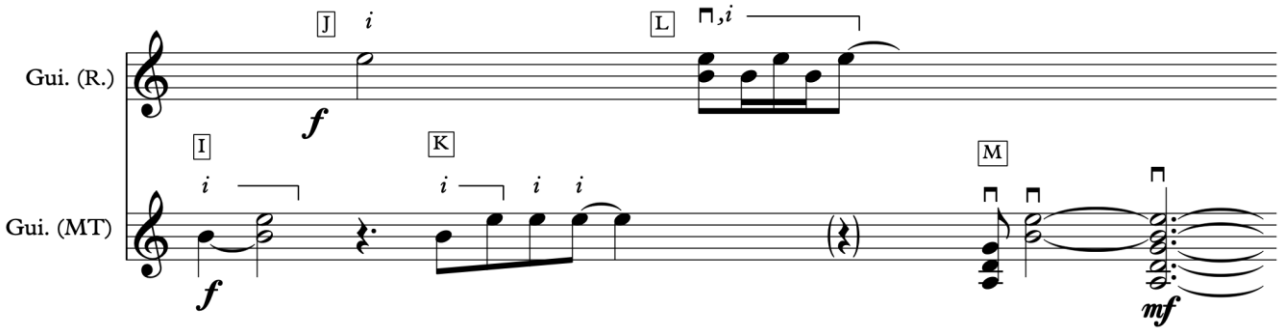

Figure 10: Sections I-M of transcription 27th October 2017 (complete transcription in Appendix)

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

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

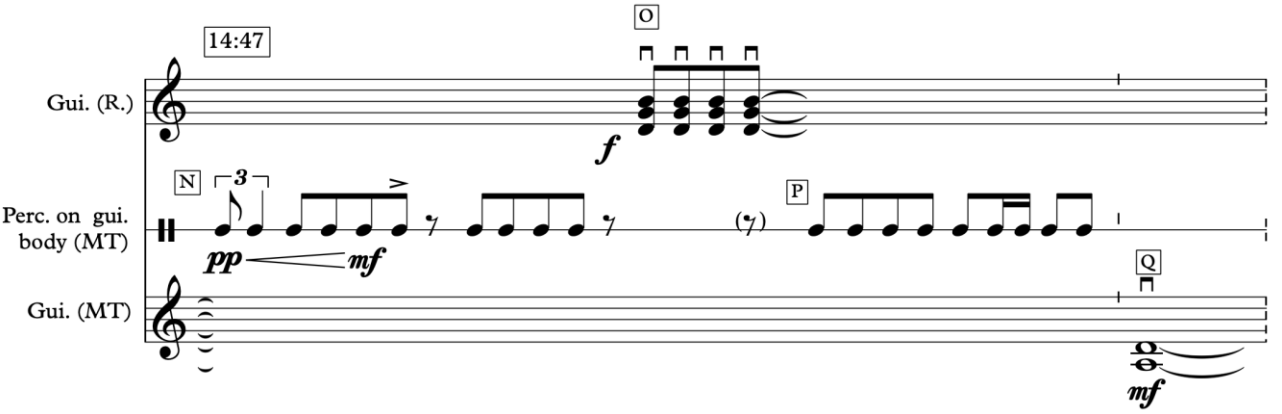

Figure 11: Sections N-Q of transcription 27th October 2017 (complete transcription in Appendix)

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

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

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

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

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

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

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

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

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

DISCUSSION

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

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

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

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

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

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

CONCLUDING THOUGHTS

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

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

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

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

ACKNOWLEDGEMENTS

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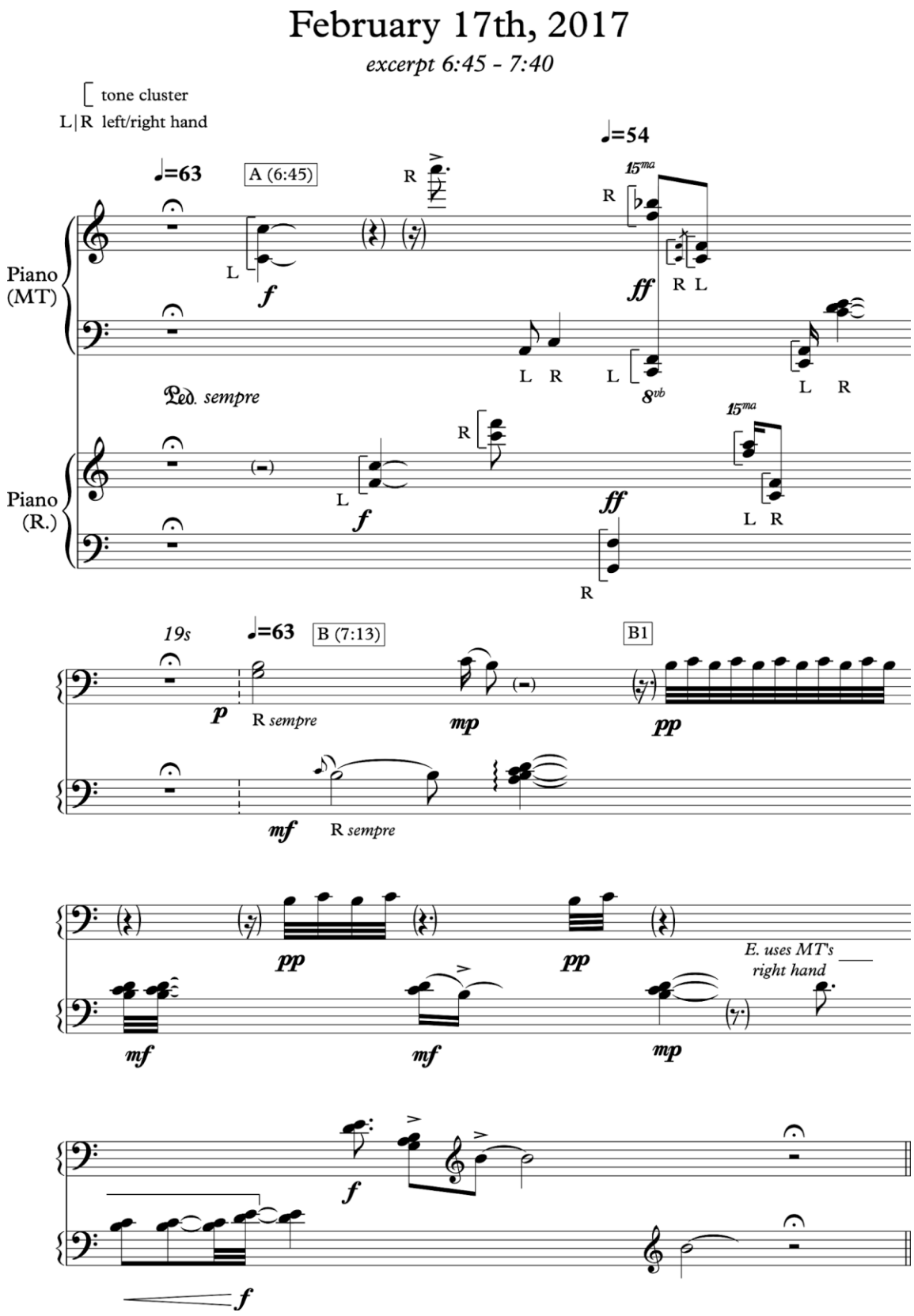
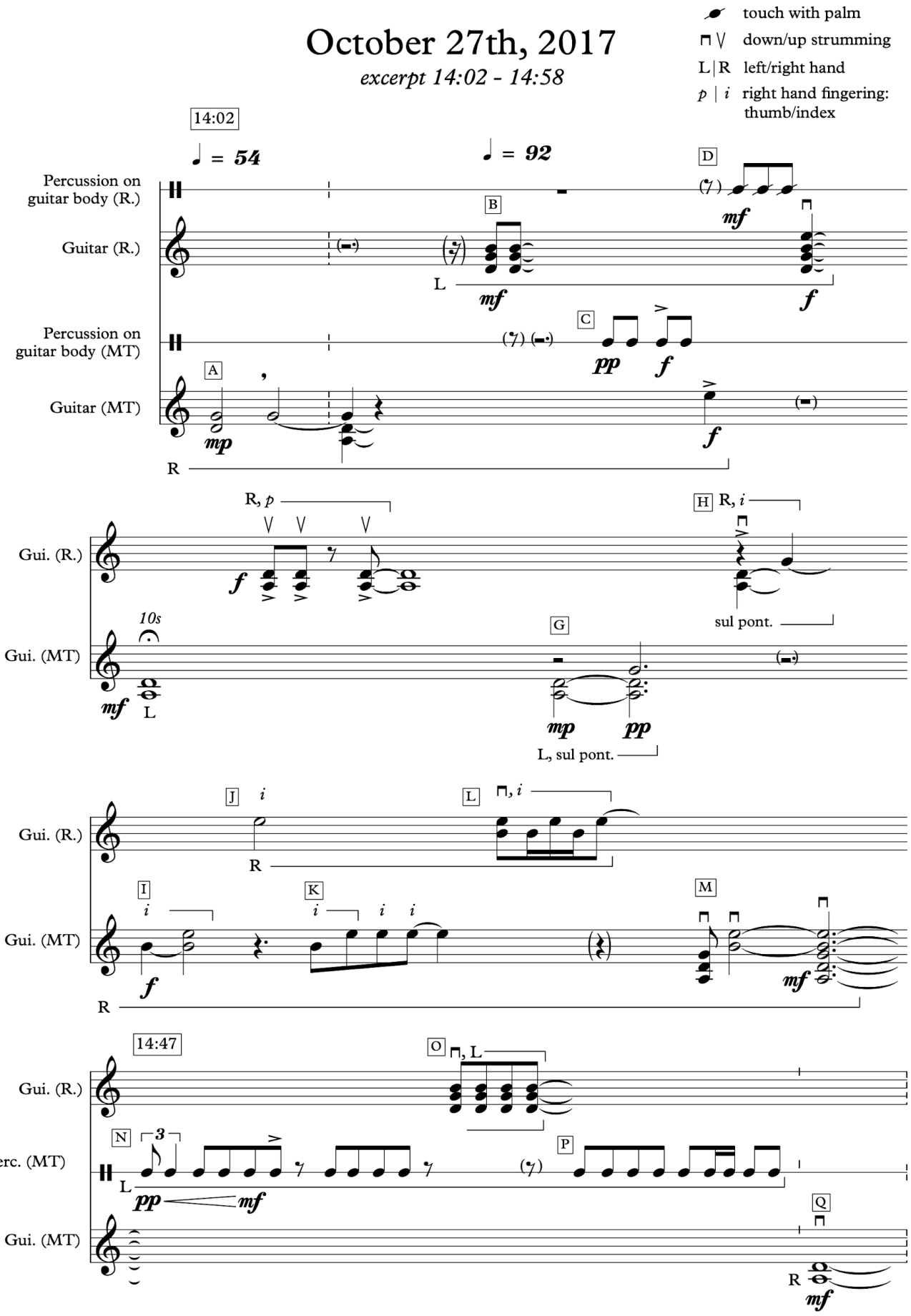
APPENDIX: COMPLETE TRANSCRIPTIONS




October 27th, 2017
excerpt 14:02 - 14:58
touch with palm
down/up strumming
L | R left/right hand
p | i right hand fingering: thumb/index
14:02
♩ = 54
♩ = 92
Percussion on guitar body (R.)
Guitar (R.)
Percussion on guitar body (MT)
Guitar (MT)
A
B
C
D
mp
mf
pp
f
L
R
Gui. (R.)
Gui. (MT)
R, p
H R, i
10s
G
sul pont.
mp
pp
L, sul pont.
J i
L ⊓, i
I
K
M
14:47
O ⊓, L
Perc. (MT)
N
P
Q

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Ελληνική περίληψη | Greek abstract

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

Alberto Balducci

ΠΕΡΙΛΗΨΗ

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

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

αυτισμός, μορφές ζωτικότητας [forms of vitality], μικροανάλυση, μουσικοθεραπευτική μεταγραφή [music therapy transcription]

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ARTICLE

Therapeutic Music Training (TMT): A music therapy model using music training on an instrument to address therapeutic goals in the areas of cognition and psychosocial health

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ABSTRACT

Music training has been noted for its benefits, both musical and non-musical, for the learner. Grounded in literature and informed by clinical work, the music therapy model *Therapeutic Music Training* (TMT) was developed. TMT uses the experience of learning to play an instrument to target specific non-music therapeutic goals in the areas of cognition and psychosocial health. Music training specifically is critical, as the components and characteristics of music contribute to the therapeutic mechanisms for both cognitive and psychosocial goals. Because of the engagement of the prefrontal cortex and the demands placed on cognitive control and working memory during TMT, it can be a unique and effective intervention for cognitive rehabilitation. The positive impact of new skill learning on self-perception, and the inherent expressiveness of music production, allows for TMT to be used to address a number of psychosocial goals. This paper introduces TMT and describes the theoretical bases for this music therapy model.

KEYWORDS

music training, attention, cognitive rehabilitation, psychosocial goals, sense-of-self, self-empowerment

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INTRODUCTION

Music training is valued for the many benefits it provides to the learner. These benefits range from the pleasure of the experience of performing music, and musical self-expression, to enhanced speech processing (Wong et al., 2007), phonological awareness (Dege & Schwarzer, 2011) and reading skills (Douglas & Willatts, 1994; Gardiner, Fox, Knowles & Jeffery, 1996). The act of performing on an instrument may also result in social benefits as students perform for and with each other (MacDonald & Miell, 2000). Because of the value of music training, many schools include music education along

with 'core' subjects, and conservatories promote their music programmes by highlighting the range of potential non-musical outcomes as a result of learning to play an instrument. In addition to the noted benefits, there is a further application and benefit of music training: therapy.

Grounded in literature and informed by clinical work, the music therapy model *Therapeutic Music Training* (TMT) was developed. TMT uses the experience of learning to play an instrument to target specific non-music therapeutic goals of the client. The primary goal areas addressed by TMT are cognition and psychosocial health. Because of the engagement of the prefrontal cortex and the demands placed on cognitive control and working memory, TMT can be a unique and effective intervention for cognitive rehabilitation. Examples of cognitive rehabilitation goals include improved attention, executive functioning and memory. The tangible outcome of producing a song can result in the motivation required to remain engaged in the rehabilitation process. The positive impact of new skill learning on self-perception, and the inherit expressiveness of music production, allows for TMT to be used to address psychosocial goals. Examples of psychosocial goals include improved self-identity, increased self-esteem and empowerment, reduced anxiety, and an appropriate release of emotion. Secondary benefits of TMT include improved motor control. The motor demands of producing a sound on an instrument can add further benefit for motor skills, including range-of-motion, strength and coordination. As a result, TMT can be an effective intervention for a range of therapeutic outcomes.

TMT was developed and piloted in clinical work by this author beginning in March 2004. Since that time, several case study examples have demonstrated the effectiveness of TMT to address cognitive rehabilitation goals and psychosocial goals. This author is a qualified music therapist working in cognitive rehabilitation and is a qualified psychotherapist. Prior to clinical work, this author maintained a full-time piano studio for 25 years. The purpose of this paper is to introduce the music therapy model TMT, describe its theoretical context, and inform music therapy practice. There is sparse literature investigating the use of music training for therapeutic goals, and this paper can contribute to filling that gap.

TMT and special music education

The distinction between TMT and special music education or modified music instruction is that the purpose of TMT is to address non-musical goals. Rather than the goal of achieving a specific level of performance ability or having the opportunity to experience music-making, the purpose of TMT is to increase abilities in specific non-musical goal areas of cognition or psychosocial health. Although in TMT progress is made in a musical context, unlike in music education, the purpose of this progress extends beyond the goal of the music level itself or performance abilities to the benefits that this progress supports in either the cognitive or psychosocial goal areas.

TMT and music therapy

The profession of music therapy addresses both psychosocial and cognitive goals. Music therapy is defined by Bruscia (1998, p. 20) as "a systematic process of intervention wherein the therapist helps the client to promote health, using music experiences and relationships that develop through them as

dynamic forces of change". Bruscia (1998, p. 20) further states that to be considered therapy "this process requires intervention by a therapist. An intervention is a purposeful attempt to mitigate an existing condition in order to affect some kind of change". TMT is a music therapy model and meets Bruscia's (1998) definition of music therapy.

This new music therapy model, TMT, is distinct from other models of music therapy addressing psychosocial goals in its use of *music training* rather than focusing primarily on the expressive qualities of music. Bruscia (1998, p. 22) states that "of particular importance is a non-judgemental acceptance of whatever the client does musically, and clear priorities with regard to the purpose, value, and meaning of music within the therapy process". Within TMT, although the therapist is supportive and empathetic to the client, s/he would give feedback and correction regarding the client's music, reflecting the music training basis of this approach. As with other models of music therapy, or with psychotherapy in general, the therapeutic relationship established between the therapist and client in TMT is also important.

TMT is distinct from other music therapy models addressing cognitive goals. The music therapy model Neurologic Music Therapy (Thaut & Hoemberg, 2014) addresses cognitive goals. However, it does not use music training in its interventions. While literature supports the cognitive benefits of music training (Hannon & Trainor, 2007; Bialystok & DePape, 2009; Chan et al., 1998; Moreno et al., 2011; Pallesen et al., 2010; Strait et al., 2010; Strait & Kraus, 2011) and also supports the neuroplasticity of cognitive functions (Miller, 2000; Peterson & Posner, 2012) there is sparse literature regarding music-based cognitive rehabilitation, and in particular there is a significant gap in the literature regarding the use of music training for cognitive benefit. TMT aims to link the cognitive benefits of music training – for the components of attention and executive functioning in particular – to cognitive rehabilitation.

The music therapy model TMT is distinct from special music education or modified piano instruction due to its goal areas. TMT is a new model within the profession of music therapy because of its use of music training to address goal areas of psychosocial health and cognition otherwise addressed within the profession.

The premise of TMT is that the individual be effortfully engaged in learning to play an instrument in order to stimulate a response and gains in the target goal area. TMT has its theoretical basis in literature regarding the influence of music training on cognition (Pallesen et al., 2010; Barrett, K.C., Ashley, Strait & Kraus, 2013; Moreno & Bidelman, 2014), evidence of the influence of music on the brain obtained by comparing musicians and non-musicians (Bailey et al., 2014; Munte, Altenmuller & Jancke, 2002; Wan & Schlaug, 2010), theories of attentional processing (Baddeley, 2012; Corbetta & Shulman, 2002; Peterson & Posner, 2012), the neuroplasticity of the brain (Bach-y-Rita, 1992, 2003; Doidge, 2015; Taub, 2004), music-centred psychotherapy (Ahonen-Eerikaninen, 1992, 2007, 2018; Wheeler, 1981) and clinical observations of the author.

TMT AND COGNITIVE GOALS

Cognitive goals include improving various forms of attention, memory or executive functioning. Clinical populations that may target cognitive goals include traumatic brain injury, stroke, Attention Deficit Disorder (ADD), brain tumour, age-related cognitive decline, and neurological disorders such as

multiple sclerosis, Parkinson's disease, or Alzheimer's. Due to the progressive nature of neurodegenerative disease, the aim of the application of TMT or other cognitive interventions in that case would be to provide cognitive stimulation and engagement that may serve to maintain current levels of cognitive abilities rather than to rehabilitate cognition to improved long-term functioning.

Cognitive impairment

Cognitive impairment is a result of deficit in one or more areas of cognition, including the various forms of attention, working memory, memory, processing speed and executive functioning (Beers, 1992; Donders, 1993; Kaufamnn, Fletcher, Levin & Minor, 1993; Whyte, Skidmore, Aizenstein, Richer & Butters, M., 2011; Ballard et al., 2003; Jaillard et al., 2009; Michel & Mateer, 2006; Zinn, Bosworth, Hoenig & Swartzwelder, 2007). An individual living with cognitive impairment may have difficulty in suppressing distraction and completing a task, remembering or sequencing the components of a multi-step task, shifting attention between two tasks, following directions, initiation or memory. Cognitive impairment can impede progress in rehabilitation therapies, impact an individual's ability to remain at or return to pre-injury work or school, result in difficulties completing self-care tasks, and is a major source of stress for caregivers (Brooks, 1987; Kinsella et al., 1997; Van Zomeren & Van Den Burg, 1985; Whyte et al., 2011). Because of the impact of cognitive impairment on the life of an individual, on his/her ability to carry out activities of daily living, and on the lives of caregivers, it is important that the individual with cognitive impairment has the opportunity to participate in therapy to improve cognitive abilities.

A major cause of cognitive impairment is acquired brain injury (ABI), due to its high prevalence and the potential scope of impact of ABI on cognition. A brain injury may be traumatic or non-traumatic. A traumatic brain injury (TBI) is a result of a force or blow to the head. Examples of TBI include automobile accident, fall or assault. It is estimated that annually 150-200 million people worldwide experience a traumatic brain injury resulting in severe disability (Whyte et al., 2001). A non-traumatic brain injury is a result of a vascular incident or lack of oxygen to the brain. Examples of a non-traumatic brain injury include stroke, suffocation, near-drowning, or exposure to toxins such as street drugs. It is estimated that between 32% and 52% of stroke survivors experience cognitive impairment three months post-stroke (Whyte et al., 2001). Cognitive impairment is the most common sequelae following an ABI (Dikmen, Heaton, Grant & Temkin, 1999; Goldstein & Levin, 1996; Gronwall, 1987; Van Zomeren & Brouwer, 1995).

Cognitive rehabilitation

Within the goal area of cognition, cognitive rehabilitation is a primary focus of TMT. Harley et al. (1992) define cognitive rehabilitation as:

> […] a systematic, functionally oriented service of therapeutic cognitive activities, based on an assessment and understanding of the person's brain-behaviour deficits. Services are directed to achieve functional changes by (1) reinforcing, strengthening, or reestablishing previously learned patterns of behavior, or (2)

> establishing new patterns of cognitive activity or compensatory mechanisms for impaired neurological systems. (as cited in National Academies Institute of Medicine, 2011, p. 78)

The primary goal of cognitive rehabilitation is to "ameliorate injury-related deficits in order to maximise safety, daily functioning, independence, and quality of life" (Haskins, 2012, p. 3).

Cognitive rehabilitation has two approaches: compensatory and remediation. The compensatory approach seeks to compensate for the cognitive deficits by providing strategies, cues and environmental supports. Examples include an alarm to cue an appointment or posting a list of steps to follow in a personal care task such as brushing teeth. The remedial approach seeks to remediate the cognitive deficit by addressing the underlying neural mechanisms. An example of the remedial approach is Attention Process Training (Sohlberg & Mateer, 1987), in which cognitive tasks are designed to place demands on specific attentional processes. Attention Process Training is based on training "underlying attentional processes which in turn improve higher, more complex cognitive functions" (Michel & Mateer, 2006, p. 64).

TMT: A remedial approach to cognition

TMT is a remedial approach to cognitive development or rehabilitation. That is, the aim of TMT expressed in cognitive goals is to drive attentional processes and to place demands on working memory and executive functioning abilities in order to support the development of, or remediate deficits within, these processes and improve cognitive functioning. Working memory is defined as the ability to maintain and manipulate information without incoming sensory stimulation (Baddeley, 2012; Corbetta & Shulman, 2002). Executive functioning has been described as the cognitive ability to plan, organise and initiate behaviour (Solhberg & Mateer, 2001; Stuss & Benson, 1986). Executive functioning involves processes of focused and sustained attention to remain on task, monitoring and the accommodation of feedback, distraction suppression, problem solving, purposeful behaviour, and mental flexibility (Anderson et al., 2002, Chen et al., 2006; Stuss & Benson, 1986; Pennington & Ozonoff, 1996). In order to address cognitive deficits, cognitive (re)development interventions should place demands on the prefrontal cortex.

The importance of the prefrontal cortex in cognition

Within the frontal lobes, the prefrontal cortex (PFC) has extensive connections throughout the brain, connected with sensory neocortical and motor systems and subcortical structures (Miller, 2000). Due to this widespread connectivity, the PFC is involved in several aspects of cognition (Chen et al., 2006; D'Esposito & Postile, 2002) and in goal-directed behaviour (Chen et al. 2006; Cohen et al., 1998). Central to the PFC's involvement in cognition is its role in executive functioning (Anderson et al., 2002; Chen et al., 2006; Krebs et al., 2012; Levine et al., 2008).

Goal-directed behaviour and executive functioning involve cognitive control. Miller (2000) proposes that the widespread neural connections of the PFC allow it to exert a top-down influence on these networks. Goal-directed behaviour is a result of the PFC's ability to bias attention, memory and

motor output towards a common theme (Miller, 2000). This biasing of attention supports cognitive control and enables the PFC to attend to a target stimulus, sustain attention, and organise a response. Individuals with cognitive impairment often demonstrate a deficit in cognitive control, having difficulty remaining on task or responding appropriately.

Because of its role in cognitive control and attention, tasks that engage the PFC should be a key component of cognitive rehabilitation interventions. The function of the PFC is moulded by experience and informed by previous learning (Peterson & Posner, 2012), providing evidence of its plasticity and ability to be trained. Training the PFC is achieved through specific tasks that place demands on its networks. Repeated driving of the PFC can strengthen and improve its various network connections involved in cognition. Tasks that have a specific target and require a behavioural response place demands on working memory, engage executive functioning and memory, or involve monitoring and error detection, all of which will drive the PFC and its associated cognitive networks.

The importance of attention: The foundation for cognition

Although in the literature attention, memory and executive function are often divided and discussed as separate components of cognition, functionally they are interconnected. However, attention is foundational to memory, executive functioning and higher cognitive processes. Improvements in attention can support improvement in other cognitive processes (Mateer & Sohlberg, 1988; Mateer, Sohlberg & Yougman, 1990; Mateer, 1992; Niemann, Ruff & Basser, 1990) and therefore cognitive rehabilitation interventions should initially target and continue to address attentional processes. Deficits in attention have a negative impact on an individual's ability to perform activities of daily living. If one cannot attend to information, one cannot focus on important stimuli, ignore distraction, stay on task, or effectively consolidate memory.

Due to the complexity of attention, there are several definitions (Cohen, 1993; Mesulam, 2010; Schmitter-Edgecombe, 1996) and theories (Baddeley, 2012; Dosenbach, Fair, Cohen, Schlaggar & Petersen, 2008; Peterson & Posner, 2012) proposed in the literature. All descriptions of attention include the components of limited attentional resources, target detection, distraction suppression and vigilance. Solhberg and Mateer (2001) have identified five forms of attention: focused (ability to respond to specific stimuli); sustained (ability to remain on task during a continuous activity); selective (attend to stimuli and suppress distraction); alternating (shift attention between tasks that require a different behavioural response); and divided (respond simultaneously to multiple task demands). Solhberg and Mateer later revised these forms of attention and removed divided attention, proposing it to be a rapid form of alternating attention (APT III Manual).

TMT: An intervention to address cognitive goals

Both attention processes and the activities of the PFC are noted in literature to be plastic and influenced by experience (Kelly et al., 2006; Miller, 2000; O'Connell & Robertson, 2011; Peterson & Posner, 2012), supporting the hypothesis that attention can be trained and that the PFC networks can be strengthened. Learning is proposed by Miller (2000) to be an important contributor to the PFC's organisation. The re-organisation of the PFC following ABI is proposed by Chen et al. (2006) to be the

primary goal of cognitive rehabilitation. The goal of TMT is to place demands on the PFC and to train and strengthen the cognitive networks involved in attention, working memory and executive functions. The strengthening of these cognitive networks supports the reorganisation of the PFC and improved functional outcomes. Working memory and attention processes overlap functionally (Corbetta, 2002), and as a result, TMT tasks placing demands on these cognitive functions can effectively engage, and potentially strengthen, PFC organisation and effectiveness.

Based on theories of cognition and attention, TMT and its associated music-based cognitive tasks have been developed to include the following criteria:

1. The intervention is designed to stimulate top-down processing, engaging the PFC.
    a. Detection and response to a target stimulus is used to increase attentional processing and engage cognitive control.
    b. Goal-directed behaviour
    c. Effortful processing
2. The intervention will place demands on working memory.
3. The intervention will be designed to target a specific aspect of cognition, informed by the models of attention described by Sohlberg and Mateer (2001). These include focused, sustained, selective, alternating and divided attention.
4. Interventions will be administered following the hierarchy of attention and cognition, beginning at the level appropriate for the client.
5. The interventions throughout the treatment period will be shaped, gradually increasing in complexity, and will include novelty to continue to engage attention and stimulate attentional and memory processing at an increasingly higher level (Kelly, Foxe & Garven, 2006; Solhberg & Mateer, 2001). This in turn may also serve to support generalisation.
6. The interventions will be varied, highlighting melody, rhythm or harmony, or focusing on different senses such as sight, hearing and movement in order to train attention and to prevent the acquisition of a 'trained task' only within a specific activity type.
7. Interventions will be administered with consideration to intensity and duration of treatment, recognising that neuroplastic change is sculpted by experience.

Through the process of learning to decode music notation and play an instrument, TMT drives the PFC and its cognitive networks by requiring cognitive control and goal-directed behaviour. TMT provides opportunity to influence PFC activity and cognitive functioning through new learning that is multimodal, requires effortful processing, and places demands on the attentional processes, working memory, executive function and memory. In addition, the PFC is activated during monitoring and error detection processes as the individual determines the accuracy of their response to the music notation and details. The primary instrument used in TMT is the piano. This allows for TMT to be adapted for use of either hand or both, depending on the motor ability of the client. In addition, playing the piano involves the reading of two clefs, which provides a greater scope of cognitive demands such as divided attention and an increased cognitive load.

Goal-directed behaviour is involved in the requirement to respond to a specific target (the note(s)) and organise a specific response (the accurate execution of the note(s)) while suppressing

distraction. This distraction may be internal, external (environmental, for example), or within the written music itself. The experience of performing even a single bar of music can engage several components of cognition: *long-term memory* – remembering the note(s) previously learned; *working memory* – holding the identification and location of note(s) in memory until executed on the instrument; *sustained attention* – visually tracking item to item in the measure; *selective attention* – remaining on task and suppressing distraction to complete a measure, line or page of music; and *alternating attention* – through shifting attention from notation to other music symbols or between clefs. *Monitoring and error detection* are engaged while listening to the auditory feedback of action, the pitch and duration of the note, and while assessing the accuracy of response. All the above components involve attention and executive function processes.

Based on goals established in assessment, tasks within TMT can be carefully shaped to the patient's cognitive deficit, level of ability and pace of learning. Beginning treatment at the appropriate level of task difficulty and the subsequent pace of increase in the level of difficulty are both important considerations in cognitive therapy. Initially matching the level of task difficulty to the patient's cognitive abilities allows for strengthening of the cognitive networks. Once functional improvements have been noted, it is important to increase the level of difficulty of the tasks. This increase in difficulty is important to ensure that cognitive processes continue to be challenged and strengthened, resulting in continued improvement. Strengthened networks can lead to a shift from an effortful response of the brain to an automatic response. This shift is a result of improved efficiency of the networks. However, in order to support continued development or rehabilitation, cognitive tasks must require effortful processing by the brain. Therefore, an important aspect of ongoing cognitive rehabilitation is the gradual increase in task demands. This may be reflected in novelty of information, more information to process, or in an increase in the complexity of the information.

TMT provides opportunity for continued effortful processing and cognitive rehabilitation through the gradual increase of cognitive demands by appropriately timing the introduction of new learning material. This new learning material may support increased cognitive load due to the novelty of the material, such as a new note or musical symbol; an increase in information, such as a longer song; or increased complexity of information, such as adding a second clef or moving from reading alternately between the clefs to reading the clefs simultaneously. Because TMT allows for the opportunity to focus on specific components of music such as melody, rhythm or harmony, this allows for multi-site neural engagement and for numerous possibilities of complexity or novelty of information. The various musical components that can potentially serve as cognitive targets, and the ongoing acquisition of new songs, providing new information to process, serves to support the continued improvement of cognitive processes rather than a task-specific improvement.

Reading and executing music is a multimodal task, involving various senses, and is therefore potentially a stronger stimulus of the PFC. The components of tracking visual information, executing a motor response, and monitoring the auditory feedback involve a number of senses or modalities. This multimodal stimulus may be a particularly effective stimulus for an injured brain where there may be potentially more impairment in one modality than another.

In addition to driving cognitive processes during a session, TMT includes the repetition required to reinforce and strengthen neural connections and to stimulate a neuroplastic response through the assignment of music homework to be practiced between sessions. The reward of learning to play a

song provides motivation for the client to remain engaged in cognitive therapy for an extended period of time, as required to stimulate neural change. Frequency and intensity of treatment are important considerations for all therapy work. TMT provides opportunity for high frequency of treatment due to the combination of the TMT session and between-session practice of assigned homework. Intensity of treatment is reflected in TMT's criteria to match the client's current level of ability and to gradually increase the cognitive demands of the tasks based on evidence of the client's improvement and need. Frequency and intensity of treatment also support neuroplastic change.

TMT: Music-based cognitive rehabilitation may require alternative tasks

Based on the level of attention deficit or other considerations, some individuals may require training in preliminary music-based attention tasks instead of, or prior to, participating in TMT. These tasks are similar to the ear-training activities of conservatories and are modified to use specific music targets of melody, rhythm or harmony for attention tasks. These tasks also target working memory and executive function processes.

Literature support for the hypothesis of TMT for cognitive rehabilitation

The hypothesis for the efficacy of music-based cognitive rehabilitation, and in particular for TMT, is supported in the literature regarding neuroplasticity and the musician's brain, music training's influence on non-musical abilities, musicians' enhanced working memory and cognitive control, the transfer of benefit of music training, and by clinical observations made by the author.

Anatomical differences in the brains of musicians when compared to non-musicians (Bailey et al., 2014; Munte, Altenmuller & Jancke, 2002; Wan & Schlaug, 2010; Zimmerman & Lahav, 2012) provide evidence of music's influence on the brain and its ability to stimulate a neuroplastic response and change. While music-related anatomical differences would be expected in musicians' brains, such as in sensorimotor and auditory areas, differences in musicians' brains have extended to other areas including the pre-central gyrus (Amunts et al., 1997), the anterior-medial part of the Heschl gyrus (Schneider et al., 2002), and parts of the cerebellum (Hutchinson et al., 2003). In addition to anatomical differences, functional differences have been observed between musicians and non-musicians. Studies have provided evidence of musicians' enhanced abilities in a variety of areas, including phonological awareness (Dege & Schwarzer, 2011), perceiving speech in noise (Parberry-Clark, Skoe, Lam & Kraus, 2009), reading (Douglas & Willatts, 1994, Gardiner, Fox, Knowles & Jeffery, 1996) and auditory perception (Strait et al., 2014). These studies demonstrate music training's influence on non-musical functions, and provide support for the hypothesis of the benefit of music training for non-music therapeutic goals.

Significant to TMT are studies that provide evidence of musicians' enhanced cognitive abilities (Barrett et al., 2013; Forgeard, Winner, Norton & Schlaug, 2008; Pallesen et al. 2010; Vaughn, 2000), and in particular literature demonstrating musicians' enhanced working memory, cognitive control and executive function (Hannon & Trainor, 2007; Bialystok & DePape, 2009; Chan et al., 1998; Moreno et al., 2011; Pallesen et al., 2010; Strait et al., 2010; Strait & Kraus, 2011). This literature supports the

hypothesis that TMT can be an effective intervention to target and influence the processes of working memory, cognitive control and executive functioning.

> A client, Cecilia (pseudonym), was referred for TMT to address cognitive impairment that was a result of 2 consecutive strokes on the same day, one in each hemisphere. Following the strokes, Cecilia was in a coma for 3 weeks. Post-stroke symptoms included speech impairment, right side paresis, difficulty reading letters or numbers, difficulty interpreting symbols, short attention span, difficulty acquiring new information, memory impairment and cueing being required to complete tasks. Cecilia also had impairment in alternating attention; she was unable to shift attention from one stimulus to another. For example, if the phone rang while Cecilia was eating, she could not continue to chew her food while hearing the phone. Cecilia was referred to TMT three years post-stroke.
>
> The initial cognitive goal addressed in TMT was improving attentional abilities: working memory, divided attention and sustained attention. Through carefully sequenced TMT sessions over 18 months, Cecilia was taught to read both clefs and play increasingly more complex piano pieces with her functional left hand. Although new learning post-stroke was challenging, Cecilia was successful in learning to read notes and their rhythmic value. Unfamiliar music was taught to her in order to place demands on her working memory engaged during note reading and execution, and to prevent her from relying on auditory cues of familiar melodies. Her attentional improvements were first observed within a music context, where she demonstrated improved ability to de-code notation, improved memory of music-related information, improved ability to shift her attention from one staff to the other, and an increase in the length of time she was able to sustain her attention on a task. Rhythm and melodic direction engage attention, and potentially any attentional gains might have only been observed within music activities. However, in time, Cecilia and her family reported that her improved attentional abilities transferred to activities of daily living. Cecilia demonstrated an increased ability to remain on task during distractions. It was also noted that she was able to better track conversations when more than two individuals were involved, as she was able to divide her attention between various individuals and track their comments. Her attention span during tasks increased in general, as in her TMT sessions, to approximately 30 minutes. Cecilia reported on several occasions that “things are beginning to click [in my brain]” *[she pointed to her head]*.

It is important for the clinician using TMT to be careful not to default to ‘piano lessons’ or lessons of another instrument, but rather to remain focused on specific cognitive goals such as increased attention span, and make decisions regarding session content based on these goals. New information should be guided by evidence of improved cognitive functioning in the goal areas and pacing of sessions guided by a structured increase of task difficulty and complexity when appropriate.

Potential challenges to TMT in cognitive rehabilitation

There are a number of potential challenges to the effectiveness of TMT, including the questioning of a link between music and cognitive abilities, the question of a remedial approach to cognitive rehabilitation, and the question of generalisation of results of treatment to activities or daily living.

Schellenberg (2004, 2005, 2006, 2011) has investigated the link between music training and enhanced cognitive abilities, and highlights the important question of music's *association* versus music's *causation* of enhanced cognitive abilities. He concludes that music is associated with intelligence and that individuals with higher IQ are more likely to participate in music training (Schellenberg, 2004, 2011). From a therapeutic standpoint, the question is not "does music make your smarter?" but rather, "does music effectively engage attention and executive functioning processes?" and "can music engage these processes in an injured brain?". The literature noted above provides evidence that music training does engage, and enhance, several aspects of cognition. Therefore, it is reasonable to apply music training to therapeutic cognitive goals.

There is literature that questions the effectiveness of a remedial approach in addressing cognitive impairment, stating that due to the scope of research designs investigating the topic and the variations in attention programmes, there is a lack of conclusive evidence in support of remediation (National Academies Institute for Medicine, 2011; Ceravolo, 2006; Park & Ingles, 2001**;** Van den Broek, 1999**).** However, the question is shifted from the efficacy of remediation for cognitive deficits to the question of research design, inclusion criteria for studies, and inclusion criteria for literature reviews. Numerous studies provide evidence of cognitive improvement following remedial interventions (Cappa et al., 2003; Cicerone et al., 2005; Lincoln, Majid & Weyman, 2000; Mateer & Mapou, 1996; Sohlberg & Mateer, 2001) and support the hypothesis for the effectiveness of TMT.

While some literature acknowledges improved cognitive performance within a remedial approach reported in studies, they challenge the practical benefits, proposing the gains observed are task-specific and do not transfer to untrained tasks or activities of daily living (Ceravolo, 2006; Gillian, 2009; Gummow, Miller & Dustman, 1983; Park & Ingles, 2001). Other literature states that planning for generalisation should be incorporated in the therapeutic process in order to support the transfer of gains made during therapy (Ponsford, 2008; Sohlberg & Mateer, 2001; Sohlberg & Raskin, 1996; Stokes & Baer, 1977). Gordon (1987) describes three levels of generalisation: 1) consistent gains on different training sessions; 2) improvement on similar tasks; and 3) transfer of improvement to activities of daily living. Gordon (1987) highlights the important question of the level of transfer gained. Additionally, rather than ask "what level of transfer has been achieved?", one might ask "how much time might it take for an individual to move along a continuum of transfer?" Often a time pressure is placed on generalisation by professionals or others who expect that gains should be observed within a specific timeframe. However, expectations regarding the timing of the transfer of gains may not allow for the time required by an individual to demonstrate a transfer of gains. The question may not be "will gains transfer (by a specific time)" but rather "how much time does this individual need to be engaged in therapy before a transfer of gains may be observed?" TMT assumes that by driving the underlying cognitive processes, these processes will strengthen, and potentially result in improved

cognitive performance in non-musical contexts, that is, transfer to activities of daily living. TMT clinical work has resulted in observations of improved cognitive abilities of individuals with cognitive impairment as a result of an ABI rated as severe. Attention and memory improvements were first noted within a musical context. However, these cognitive gains appeared to eventually transfer to non-musical contexts and to activities of daily living.

TMT AND PSYCHOSOCIAL GOALS

TMT can provide therapeutic psychosocial benefits through the experience of gaining a new skill. Due to the positive impact of gaining a skill (Murray, 2007; Rickard et al., 2013; Warner, 1999) TMT can be used to address a number of psychosocial goals, including improving or re-defining a sense of self, increasing empowerment, improving affect, and reducing anxiety. Clinical populations include, but are not limited to, depression, anxiety, PTSD, and persons coping with a significant life change such as acquired brain injury, illness or neurodegenerative disorder. Developing specifically a *music* skill further contributes to the therapeutic benefit of TMT due to the inherent expressive qualities of music and the contribution of music to personal identity. In addition, the therapeutic relationship established between the clinician and client during TMT serves to support the psychosocial goals, providing a sense of acceptance and security to individuals during the process of learning a new skill and as they work towards their therapeutic goals.

Literature supports the use of TMT for psychosocial goals

Literature supports the use of music to address psychosocial goals. The use of music to address psychosocial need is fundamental to the profession of music therapy (Ahonen, 2018; Bruscia, 1998; Castillo-Perez et al., 2010; Clements-Cortes, 2011; Dileo & Bradt, 2007; Dileo, 2015; Jochims, 1990; Lee, 2015; Loewy, 2000; Loewy et al., 1997; Wheeler, 1981), and specific models of music therapy have been built on this, such as Group Analytic Music Therapy (GAMT) (Ahonen-Eerikainin, 2007) and Guided Imagery in Music (GIM) (Bonny & Savary, 1973). A key aspect of the effectiveness of music in psychotherapy is the communicative aspects of music. The profession of music therapy has validated the use of music to address a range of psychosocial goals such as the treatment of depression, anxiety, PTSD and low self-esteem with a range of clinical populations, including palliative care, youth at risk, mental health, and those living with terminal illness. Research and case study examples demonstrate the unique effectiveness of music therapy in addressing psychosocial goals. Because TMT is not simply the acquisition of a skill, but rather a music skill, it is a unique and powerful intervention that can be used to address psychosocial goals, including improved sense of self, increased empowerment, improved affect and reducing anxiety.

Sense of self

Sense of self refers to one's concept of oneself. Vickery, Gonkovsky, Wallace and Caroselli (2006, p. 30) describe self-concept as a "collection of beliefs about an individual's own functioning in various

life dimensions". The abilities and skills one has, and their participation in and contributions to a range of social contexts, contribute to one's self-concept. A sense-of-self includes personality characteristics, values, and identity as an individual and in social contexts (Myles, 2010; Lewis & Rosenberg, 1990). For example, an individual may identify as an artist because of artistic abilities and interests, a parent in the role of raising a child, or a teacher employed by a school board and contributing to the education of students. A person's self-concept may include values that are held as important, such an "I am an honest person", or character traits such as impatience or humour.

A sense-of-self may be negatively impacted as a result of a significant life change. Significant life change can be a result of numerous events including stroke, ABI, cancer, development of a neurodegenerative disease, bereavement, mental illness, or other forms of crisis. O'Callaghan, Powell and Oyebode (2006) note that these significant life events may alter a person's abilities, autonomy, social interactions or approval, physical state or appearance, or knowledge of themselves.

A loss of, or a shattered, sense of self following a traumatic event needs to be addressed in order to support healing and recovery (Chu, 2011; Herman, 2006; Molica, 2006; Rothschild, 2000; Van der Kolk, 2015). The loss of a sense of self or self-concept can lead to anxiety, depression and fear (O'Callaghan, Powell & Oyebode, 2006; Vickery, Gonkovsky, Wallace & Caroselli, 2006). In addition to the direct influence these have on the immediate quality of life, they can also negatively impact an individual's participation in meaningful life experiences and in rehabilitation therapies. As a result, there is a shift in healthcare to address psychosocial needs, including the impact of a lost or damaged self-concept (Nochi, 1998).

Loss of sense of self and ABI

The loss of a sense-of-self may include several components. In discussing sense-of-self following brain injury, Nochi (1998) describes three aspects of loss of self: loss of clear self-knowledge due to memory impairment, loss of self by comparison to pre-injury state, and loss of self in the eyes of others. Myles (2004) identifies three themes that need to be acknowledged by clinicians when working with individuals who are experiencing a loss of self. These themes include the sense of being a "different person" than they were pre-injury, having a negative self-evaluation, and the outcome of emotional distress.

After experiencing an ABI, an individual may experience significant changes in motor, cognitive or speech abilities. Tasks that previously were performed with ease may now require a much higher degree of effort or compensation, or may no longer be possible to perform. This can include aspects of activities of daily living such as self-care, or activities that reflected personal interests such as sports or gardening. Loss of participation in activities that were once a regular part of life can result not only in a grieving process, but also in a loss of identity. The person may no longer identify as a soccer player or successful office administrator due to lack of abilities in those areas.

Loss of sense of self and illness

Many aspects of self-concept that are experienced following an ABI are also experienced by individuals who are experiencing illness or neurodegenerative disease, or who are living with the effects of medical

treatment. Illness may impact an individual's ability to participate in school or work to the extent they did previously, and may affect their ability to complete activities of daily life or of personal significance. Individuals may be coping with the loss of their "pre-illness" identity, and may be experiencing difficulty in developing a positive new sense of self. Treatments such as surgery or radiation may result in changes in abilities or appearance which can further contribute to a changed self-concept. If the illness is a progressive disease, the individual may be dealing with a gradual decline in cognitive or motor abilities and struggling to "hold on to who they are".

Loss of sense of self and grief

Balk (2004) highlights the importance of redefining oneself as an important aspect for recovery from a situation of grief. He states that the healing process involves "both reframing and relearning our place in the world, our relationships with others, and our relationship with ourselves" (Balk, 2004, p. 370). He states that redefining oneself enables a person to reintegrate into life. The recovery process from bereavement shares many parallels with the healing process in which a person is grieving the loss of their previous self.

TMT to support improved sense of self

As an individual responds and adjusts to a crisis or significant change in life, he/she may be facing losses that can range from change in appearance, loss of ability, loss of role in work or studies, loss of control, or loss of relationship(s); all of which can contribute to a loss of a sense of self.

TMT is able to support the development of an improved or new self-concept by providing the individual with a new skill that enables them to re-define themselves as a musician, and to recognise abilities that can be developed and celebrated post injury, post illness, or during an illness. Magee (2002) proposes that an individual, supported by music therapy, can shift from a "disabled self-concept" to a more "abled self-concept". In TMT, a new musical skill enables a person to experience an area of success and achievement that can contribute a positive component to their self-redefinition. This musical skill is the tool used to work towards the goal of improved sense of self.

Through learning to play an instrument, the new identity of "being a musician" can support an improved self-concept or sense-of-self for the client. The term "musician" is used to describe any individual who can play an instrument. Therefore even a student can be considered a musician. Musicians may range greatly in terms of their level of musicianship or ability. If a person is a professional musician, they would distinguish themselves by including the term "professional" when describing their musicianship. Therefore, clients would not consider themselves professional musicians, but rather a musician: someone who can play an instrument.

> A client, Lorraine, (pseudonym) was living with breast cancer and undergoing chemotherapy. She was grieving the loss of her health and the changes this brought to her life. Side-effects from chemotherapy resulted in her remaining at home. She could no longer work in the job she enjoyed and could not participate in school activities of her children as she had done previously. She stated that

> cancer had robbed her "of everything". Her identity, through the work she did and the activities she enjoyed, was significantly altered.
>
> Lorraine participated in TMT, with sessions carefully constructed to accommodate her level of fatigue and to ensure success. Learning to play the piano helped Lorraine gain a sense of empowerment, and gave her a new identity as a musician. The goals of TMT were not specifically musical, but rather of empowerment and new self-identity developed through the acquisition of a new skill. While some aspects of her identity were shaken as a result of cancer, TMT introduced new aspects for her identity. This had a positive impact on Lorraine. She was proud of her developing musical abilities and stated that "piano was one area that cancer did not take". Pieces of music were assigned that reflected the emotional state Lorraine indicated she would like to express. This in turn, provided Lorraine with a creative and expressive outlet for the various emotional states that she navigated through while coping with a terminal illness. The therapeutic relationship that developed between Lorraine and the therapist provided her with further support and affirmation during this difficult time.

Balk (2004) states that striving towards "essential human sentiments", as described by Leighton (1959), is an aspect of the definition of oneself, the relationship with others, and the world. One of the essential human sentiments that Leighton (1959) identifies is the need to express creativity. As such, actively striving towards an expression of creativity serves to support the redefinition of self. TMT teaches a music skill, thereby providing an individual with the tools to be creatively expressive, supporting their redefinition of themselves, and their reintegration into live post-crisis.

As described in the previous section related to cognitive goals, TMT sessions are shaped according to the individual's ability and pace. In the case of psychosocial goals, session shaping and pacing are not used to ensure strengthening of cognitive networks as in cognitive rehabilitation, but rather to accommodate physical or emotional variables the patient may be experiencing. Sessions need to be shaped to ensure success and to develop a sense of accomplishment. The individual is becoming a musician, at whatever level is appropriate for them, and is developing a new aspect of their self-concept that is positive and grounded in the successful progression of skill acquisition. Comments from TMT clients have reflected an improved self-concept, such as: "finally something I am good at since my brain injury"; "I am proud that I can (still) learn something new"; "I can't believe I am listening to myself play the piano, I did not think I would be able to do this"; and "cancer has robbed me of everything, but I can still learn to play a new song. I still can do something". The link between self-esteem and sense of self has been highlighted by Tafarodi and Ho (2006, p. 195), who state that self-esteem is a "key aspect of personal identity". TMT provides an opportunity for improved self-concept, supported by improved self-esteem, gained through success in learning to play an instrument.

The literature has provided evidence that self-concept can be improved following life-altering experiences (Balk, 2004; Lawendowski & Bieleninik, 2017; McGrath & Linley, 2006; Vickery, Gonkovsky, Wallace & Caroselli, 2006). A life crisis, or a significant life change can be viewed not only as a negative experience, but also as an opportunity for personal growth (Erikson, 1963; Moos, 1986). TMT can provide the opportunity for the development of a new self-concept and personal growth through the

acquisition of a new skill. Literature supports the role of music in improving self- identity following crisis (Lawendowski & Bieleninik, 2017; Smeijsters & van den Hurk, 1999; Steele, 2005). Literature also demonstrates the effectiveness of learning specifically a music skill to contribute to an improved sense-of-self or self-esteem (Clendenon-Wallen, 1991; MacDonald & Miell, 2002; Murray, 2007; Rickard, 2013; Shin, 2011; Warner, 1999).

TMT and improved affect

Depression can be the result of a number of situations. Individuals have been referred to TMT to improve mood as a result of clinical depression, discouragement as they adjust to life changes due to injury or illness, or anxiety as a result of PTSD. Depression and anxiety are common outcomes to a loss of sense self (Vickery, Gonkovsky, Wallace & Caroselli, 2006). In some cases, due to depression or anxiety, the individual has withdrawn from, or is unable to participate in, activities of personal significance.

TMT can be a therapy to stimulate interest and engage an individual in a positive and meaningful activity. For many individuals, the potential to learn a new skill, or to re-develop a previous music interest is motivation to participate in the therapy. For some individuals, the simple offer of TMT suggests hope, as it implies faith in their ability to succeed in a new skill. The vast number of musical pieces and technical components of performance that are available to learn when studying an instrument can provide positive goals to work towards, or encouragement when facing a difficult or uncertain future. The careful shaping of TMT sessions is imperative to ensure success in each step of music training, contributing to a sense of accomplishment, improved mood, and motivation to continue to strive towards new musical goals. The commitment to work towards new musical goals supports ongoing participation in therapy, and its benefits.

> Client Carol (pseudonym) was an inpatient in the psychiatric ward of a hospital, due to her level of depression. Although her family and the hospital staff regularly affirmed her, Carol continued to state that she had no value and was a "not good at anything". She was offered TMT and agreed to participate. Session material was carefully prepared to ensure Carol's success. Hospital staff were pleasantly surprised at her commitment to practice her homework each day in preparation for her weekly TMT session. After a few sessions, Carol commented that the therapist "must really believe that she could succeed at learning her pieces since (the therapist) kept coming back to have a session". It was significant that she eventually wanted to play a piece of music for her family. Carol was clearly proud of her progress. Clinical observations by the therapist and hospital staff indicated that Carol exhibited a developing sense of self-confidence and empowerment and had begun to make positive self-statements. TMT contributed to this unfolding shift in her self-perception.

Individuals dealing with depression often experience difficulty finding purpose in day-to-day life and may 'drift' through an unstructured week. Some describe that a lack of purpose in their day often results in a desire to remain in bed for extended periods of time. TMT can help to establish schedule

structure and motivation to comply with that structure. Through assigned homework to practice, TMT can provide concrete goals for an individual to set and work towards during the week. Because TMT is directly linked to the individual's self-determined goal – to learn to play an instrument – the individual can often be more motivated to be committed to the goal and more likely to benefit from the therapeutic aims of TMT. A client-centred approach to goal setting often results in increased compliance and motivation. In this author's clinical experience, attendance to TMT has been very high, with only very rare cancellations by a client who is depressed. At the beginning of a session the client is always asked "how are you?". At times clients have explained that they are not well, that they are discouraged or feeling low, and that they considered cancelling that day but chose to attend their TMT session because they recognised "it could make them feel better". At other times a client may explain that s/he has worked on her/his assignment and did not want to cancel and miss the opportunity to share her/his homework and progress. Incorporating music personally significant to the client into the TMT sessions provides further motivation to participate. In addition, these personally significant songs can serve as an opportunity for self-expression and acceptance, providing further therapeutic value, and can contribute to an improved affect.

TMT and a sense of empowerment

Learning a new skill results in a sense of empowerment. A sense of empowerment, fostered through the recognition that the individual has abilities and skill, is an invaluable resource to combat a shattered sense-of-self, a sense of grieving "the life before", depression, or anxiety. It enables an individual to look beyond losses to gains, to look beyond what they cannot do to what they can do, and to replace a sense of non-purpose with a sense of having goals to strive for. A sense of empowerment can increase a person's self-confidence in addressing the challenges they are facing.

A sense of empowerment is closely linked to self-esteem (a person's perceived self-worth), and to self-confidence (a person's perceived abilities and willingness to face challenges). An increase in self-esteem and self-confidence can lead to a decrease in low mood or anxiety. A strong sense of self-confidence or self-esteem can support a person to act, and can help to avoid anxiety, depression, or sense of powerlessness (Kuhl, 2000; Pyszczynski, Greenberg & Solomon, 1999).

Through learning a new skill and experiencing success, TMT can promote a sense of empowerment, increased self-esteem and increased self-confidence. It is important that the TMT sessions are shaped to balance motivation and challenge with a sense of success and accomplishment. As an individual begins to experience success in TMT sessions and an increase in self-esteem, this may transfer to support the willingness or confidence to address sources of anxiety.

It should be noted that patients participating in TMT who are experiencing clinical depression or severe anxiety typically are also receiving other forms of psychological support, such as psychotherapy or psychiatry. This author is often working with multidisciplinary teams. Serious mental health situations are beyond the scope of music therapy alone. TMT should not be considered a treatment for these conditions, but rather a component of the healing process, complementing the work of other healthcare professionals.

Why music?

Acquisition of a new skill in any form can contribute to an improved sense-of-self or empowerment. Does a new music skill offer unique benefits to psychosocial goals? Yes. Music can uniquely support psychosocial goals due to the inherent expressive qualities of music, the significance of personally meaningful songs, and the contributions of music to personal identity.

Music skill is not simply a skill, but is also a new voice or language with which to experience or express emotion. This vehicle of self-expression can be particularly meaningful to individuals who, due to their psychosocial needs, may not want or be able to express themselves verbally. Ahonen-Eerikainen (2007, p. 128) highlights the importance of speaking and being heard, stating that "without communication there can be no therapy" (p. 128). She describes music "as a language for communication" and suggests that music can serve to create contact between individuals. While the GAMT model developed by Ahonen-Eerikainen (2007) focuses on group improvisational musical experiences, her descriptions of the aspects contributing to the communicative power of music are applicable to other models of music therapy that use the expressive qualities of music making for therapeutic purposes.

The performance of music, and in particular personally significant music, can serve as a healing experience of speaking and being heard. This can be especially important for individuals seeking emotional healing. Self-expression through music allows a person to share a range of emotional qualities without the need for verbal articulation. This can be helpful for individuals who may be in a state of denial and are not able to reflect on, or verbally express, their situation at that time. Music may serve as the first step in expressing the complex emotions they may be experiencing. For others, there may be no words to describe their situation. Music enables them to be expressive without the need for words, and to feel heard and validated. Some individuals may not have the ability to speak due to physical trauma or change to the vocal mechanisms as a result of injury or disease. For them, music can be a new, expressive non-verbal language.

The acquisition of a musical skill enables a person to play songs that are personally meaningful. Playing, versus listening only, can be an intimate form of self-expression. Personally meaningful songs, shared with others, can be a powerful form of self-expression and self-identity. Performing one's personally significant songs can support the strength of self-identity with that song. Furthermore, incorporating the preferred music of clients within TMT sessions can serve to increase the motivation and commitment to remain in therapy. Ongoing participation in therapy enables a higher level and extended period of potential benefit from the therapy.

As noted, music is used as a form of non-musical identity. That is, in addition to providing an individual with a new sense of self by contributing to a new identity as a musician post-crisis, music also contributes to a person's self-identity in non-musical contexts. For example, music may be used to express one's cultural background, social opinions, faith practice, or other themes of personal importance. Lawendowski & Bieleninik (2017, p. 87) state that "in the scope of musical identity, music is understood as a way of expressing one's self-image". This is supported by Hargreaves and North (1999), who highlight music's role in "self-identity, interpersonal relationships, and mood" (p. 79). Music is used by individuals in the expression of non-music identity, to explore themselves, and to

express themselves to others (Hargreaves, Miell & MacDonald, 2002; Lawendowski & Bieleninik 2017; North & Hargreaves, 1999).

In developing the ability to play an instrument, and through the playing of personally meaningful songs, a person is enabled to express their self-identity on several levels. This supports the (re)development of self-concept, and can contribute to improved self-esteem and self-confidence. As noted, these can potentially result in further therapeutic benefits by supporting improved affect and reduced anxiety.

CONCLUSION

TMT is the use of music training – learning to play an instrument – to achieve either cognitive or psychosocial goals. It is distinguished from modified music education in that the purpose of TMT is to achieve non-musical goals. TMT holds a unique position within a spectrum of music therapy approaches in that it focuses on the acquisition of musical skills, guided by a professional trained in cognitive rehabilitation and psychotherapy. This professional regularly assesses the type of task, its level of challenge, and the progress being made by the client in order to work towards non-musical goals. The therapeutic relationship developed between the professional and the client further supports the therapeutic process.

The TMT music therapy model also uniquely contributes to the profession of music therapy due to the goal area of cognitive rehabilitation that it addresses. Although literature regarding attentional theories and music cognition support the theory of music-based cognitive rehabilitation, there is very sparse literature on this topic. TMT seeks to link attentional theories, music cognition, and cognitive rehabilitation through a music-based cognitive rehabilitation programme.

The acquisition of specifically a music skill provides unique therapeutic benefits. The musical skill in itself is not the primary goal, but is rather a means towards the therapeutic goal of cognitive rehabilitation or psychosocial health. Music is a key contributor to the potential therapeutic gains of TMT. Music training, as opposed to general new skill training, is critical as the components and characteristics of music specifically contribute to the therapeutic mechanisms for both cognitive and psychosocial goals. The demands TMT places on attentional networks, working memory and executive functioning support its efficacy as an intervention for cognitive goals. It is the *process* of learning a song, the neural networks stimulated during the learning of a song (rather than the end experience of performing the piece), that engages, challenges and benefits cognitive abilities, and supports cognitive rehabilitation. However, the end product of being able to perform a piece of music is a key contributor to the motivation to remain in cognitive rehabilitation, and provides a tangible measure of progress. Learning a new skill, specifically a music skill, through TMT addresses psychosocial goals by supporting the development of a new sense-of-self, increased empowerment, improved affect, and reduced anxiety. While the acquisition of any new skill could result in the above psychosocial benefits, gaining a musical skill provides unique benefits due to the expressive qualities of music. Creating music provides the client with a vehicle for self-expression, as well as an opportunity to be heard and to feel validated and supported.

There is sparse literature regarding both the use of music training for therapeutic goals, and the use of music to address cognitive rehabilitation goals. This paper contributes to these gaps in the literature, and introduces a new music therapy model: Therapeutic Music Training (TMT). Literature from various disciplines, including theories of attention, cognitive rehabilitation, and music psychotherapy, support the rationale for, and informed the development of, TMT. TMT has been piloted in clinical work since 2004, and case study examples indicate its effectiveness.

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Ελληνική περίληψη | Greek abstract

Θεραπευτική Μουσική Εκπαίδευση [Therapeutic Music Training, TMT]: Ένα μουσικοθεραπευτικό μοντέλο που χρησιμοποιεί την εκμάθηση ενός μουσικού οργάνου για την επίτευξη θεραπευτικών στόχων στους τομείς της γνωστικής και της ψυχοκοινωνικής υγείας

Cheryl Jones

ΠΕΡΙΛΗΨΗ

Η εκμάθηση μουσικής είναι αξιοσημείωτη τόσο για τα μουσικά όσο και για τα μη μουσικά της οφέλη προς τους εκπαιδευόμενους . Το μοντέλο της Θεραπευτικής Μουσικής Εκπαίδευσης [Therapeutic Music Training, TMT]. αναπτύχθηκε στηριζόμενο στη βιβλιογραφία και ενημερωμένο από την κλινική εργασία. Το μοντέλο TMT χρησιμοποιεί την εμπειρία της εκμάθησης ενός μουσικού οργάνου με σκοπό την επίτευξη συγκεκριμένων μη μουσικών θεραπευτικών στόχων στους τομείς της γνωστικής και της ψυχοκοινωνικής υγείας. Συγκεκριμένα, η εκμάθηση μουσικής είναι κρίσιμη, καθώς τα συστατικά και τα χαρακτηριστικά της μουσικής συμβάλλουν ιδιαιτέρως στους θεραπευτικούς μηχανισμούς που εξυπηρετούν την επίτευξη τόσο γνωστικών όσο και ψυχοκοινωνικών στόχων. Λόγω της εμπλοκής του προμετωπιαίου φλοιού και των απαιτήσεων που τίθενται στον γνωστικό έλεγχο και στη λειτουργική μνήμη κατά τη διάρκεια της εφαρμογής του, το μοντέλο TMT μπορεί να αποτελέσει μια μοναδική και αποτελεσματική παρέμβαση για τη γνωστική αποκατάσταση. Ο θετικός αντίκτυπος της εκμάθησης νέων δεξιοτήτων τόσο στην αυτοαντίληψη όσο και στην εγγενή εκφραστικότητα της μουσικής παραγωγής επιτρέπει στο TMT να χρησιμοποιηθεί για την αντιμετώπιση πολυάριθμων ψυχοκοινωνικών στόχων. Το παρόν άρθρο εισάγει το μουσικοθεραπευτικό μοντέλο TMT και περιγράφει τις θεωρητικές του βάσεις.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

μουσική εκμάθηση, σημασία, γνωστική αποκατάσταση, ψυχοκοινωνικοί στόχοι, αίσθηση εαυτού, αυτό-ενδυνάμωση

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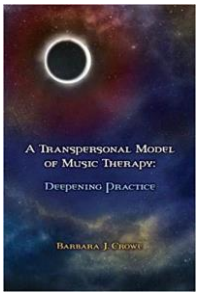
BOOK REVIEW

A transpersonal model of music therapy: Deepening practice (Crowe)



Reviewed by Noah Potvin

Duquesne University, USA

Title: A transpersonal model of music therapy: Deepening practice **Author:** Barbara Crowe **Publication year:** 2017 **Publisher:** Barcelona Publishers **Pages:** 218 **ISBN:** 9781945411267

REVIEWER BIOGRAPHY

Noah Potvin, PhD, MT-BC, is an assistant professor of music therapy at Duquesne University with a joint appointment in the Mary Pappert School of Music and the School of Nursing. Dr Potvin has expertise in music therapy in end-of-life care settings, with multiple publications on topics related to the theoretical and clinical development of music therapy in medical settings, including theoretical models for the spiritual components of end-of-life care and resource-oriented work with pre-bereaved hospice caregivers. [potvinn@duq.edu]

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Transpersonal psychology has deep roots in Western psychotherapy, tightly intertwining with the humanistic, existential philosophies that responded in the 1960s to behaviourism's reductive perspectives on human experience. In *A Transpersonal Model of Music Therapy: Deepening Practice*, Barbara Crowe seeks to locate how and where those roots of transpersonal thought are intertwining with music therapy, and subsequently illustrate a model of assessment and practice distinctly transpersonal. While she falls short of developing such a model, Crowe nevertheless has provided a helpful primer for music therapists new to the 'fourth force' in psychology.

From the outset in Chapter 1, Crowe provides a tidy and succinct introduction to the history and foundational tenets of transpersonal psychology. Her reflections on the nature and functions of philosophical models offer the reader a focused lens through which to view this introductory content to transpersonal psychology. Providing a "map of the territory explored" (p. 4), Crowe actively assists learners to interact with the content, thus optimising opportunities for understanding how transpersonal concepts and constructs fit into clinical practice. Indeed, the first two chapters of the book will probably be of the greatest utility for (a) educators teaching advanced competencies, and (b) experienced professionals expanding beyond entry-level practice. I imagine Chapter 4's focus on the nature of transpersonal experiences will be similarly instructive, though perhaps for different reasons than Chapters 1 and 2. What constitutes the transpersonal is complex, and the experience of the transpersonal is consequently non-deterministic; every trip outside of conscious awareness is a drift into unpredictable waters. Crowe offers some structure to this vast openness through brief discussions of imagination, symbols, and archetypes.

Missing from the overall discourse, however, is an acknowledgement that transpersonal psychology is a Western philosophy borrowing heavily from Eastern religions in attempts to engineer

a transcultural model of that which extends beyond conscious recognition. This is an increasingly problematic stance in the context of contemporary scholarship, both within and around music therapy, on culturally responsive practices that explicitly honour the distinctly unique values, constructs, and symbols of every culture. The most glaring omission from Crowe's discussion are the contributions of Jorge Ferrer, who has challenged the transpersonal psychology community to evolve beyond "the secular post/modernist reduction of religion to cultural-linguistic artifact and […] the religionist dogmatic privileging of a single tradition as paradigmatic" (Ferrer, 2011, p. 2). In other words, Ferrer has advocated for a participatory approach wherein clients are afforded the agency to co-construct the transpersonal event from *their* cultural location, what he refers to as spiritual individuation (Ferrer, 2002). Without this added dimension, Crowe's framing of transpersonal psychology reads as having less clinical relevance to the contemporary music therapist, which seems a missed opportunity because Crowe's discussions of transpersonal clinical processes later in the book frequently highlight client agency.

Unfortunately, as Crowe pivots in Chapter 5 to locating transpersonal psychology within music therapy approaches and techniques, clinical processes are illustrated without explicit grounding in a systematic process of assessment, intervention, and evaluation that can be located as distinctly transpersonal. For example, in concluding a section seeking to link Nordoff-Robbins music therapy to the transpersonal, Crowe writes "Improvisation is always a process, as are transpersonal experiences. The music therapist does not have to manipulate variables to promote change. The process of creative music leads the client to the shift in perspective needed at that moment" (pp. 73-74). It is difficult to read that passage and differentiate that framing from a broader humanistic philosophy that could just as easily be existential or person-centred. Crowe finds surer footing when involving the Bonny Method of Guided Imagery and Music, frequently referring back to a helpful discussion earlier in the text about Ken Wilber's levels of transpersonal therapy. However, she merely references the levels of transpersonal therapy in context of the discussed intervention without explicitly connecting the features of the intervention to the distinct elements of the attributed level.

In Chapter 6, Crowe shifts to focusing on clinical settings rather than specific approaches and techniques with an improved alignment of the transpersonal with clinical processes. Here, Crowe's expertise is on display as she provides readers a lens through which to view practice in psychiatric, medical, and developmental treatment settings from a unique vantage point. She ably contextualises goals and outcomes from a comprehensive, holistic framework that understands symptoms, behaviours, and thoughts as individual notes in a much larger symphonic work. It is easy to see this chapter being a handy reference for experienced professionals exploring transpersonal or more broadly humanistic work for the first time.

Concluding the book is an exploration of assessment in the transpersonal tradition and techniques for music therapists to use prior to sessions they anticipate having a transpersonal component. Page 126 provides helpful questions for determining a client's readiness to engage in the transpersonal, but there is no guidance offered for how to interpret potential answers. For example, one question asks if the client is "over-tired, overwhelmed, or unstable" and another asks if the client has "a good self-observing ego and a strong ego structure" (p. 126). What happens if the client is over-tired but has a good self-observing ego, or a good self-observing ego and is feeling

overwhelmed? While Crowe goes to great lengths to map out a process of information gathering and reporting (which is indeed welcomed), it is not made clear how a music therapist assessing from a transpersonal perspective is meant to interpret this data and make ethical and competent clinical decisions.

A Transpersonal Model of Music Therapy: Deepening Practice is limited in scope but nevertheless a useful addition to the music therapy literature. It will serve best as an introductory text to transpersonal psychology for the experienced professional and/or graduate student interested in advanced practice. Readers are encouraged to engage with the text in the context of recent scholarship encouraging culturally-responsive and culturally-informed music therapy practices, and to further engage with contemporary scholarship in transpersonal psychology that expands beyond the traditional Western secular scope. I look forward to seeing how transpersonal philosophies grounded from a participatory, culturally-situated vantage point evolve in music therapy.

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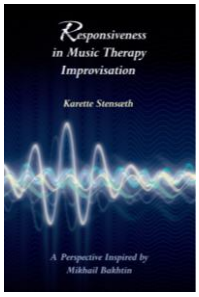
BOOK REVIEW

Responsiveness in music therapy improvisation: A perspective inspired by Mikhail Bakhtin (Stensæth)



Reviewed by Gillian Zambor

Queens University of Charlotte, USA

Title: Responsiveness in music therapy improvisation: A perspective inspired by Mikhail Bakhtin **Author:** Karette Stensæth **Publication year:** 2017 **Publisher:** Barcelona Publishers **Pages:** 193 **ISBN:** 9781945411236

REVIEWER BIOGRAPHY
Gillian Zambor, MSc, MT-BC, NMT, NICU Music Therapist, graduated from the Nordoff-Robbins training program at Queen Margaret University, Edinburgh in 2013. She currently lives in Charlotte, North Carolina, and works for Atrium Health children's hospitals; with veterans through Neuro Community Care; and as a clinical supervisor at Queens University of Charlotte. She has previously worked in a variety of different settings including acute rehabilitation, memory care, and special needs education. [gillianzambor@gmail.com]

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Responsiveness in Music Therapy Improvisation: A Perspective Inspired by Mikhail Bakhtin offers a well-rounded and comprehensive insight into new perspectives in the world of improvisation within therapy. Mikhail Bakhtin was a Russian literary theorist, philosopher of language, semiotician and scholar whose wide-ranging ideas significantly influenced Western thinking in cultural history, linguistics, literary theory and aesthetics (Encyclopaedia Brittanica Inc, 2019). Although Bakhtin was active in the debates on aesthetics and literature that took place in the Soviet Union in the 1920s, his distinctive position did not become well known until he was rediscovered by Russian scholars in the 1960s.

The author states the book's purpose is to "outline novel perspectives on responsiveness in music therapy improvisation that might provide a fresh conceptual framework for the broad value of active and creative music-making in therapy" (p. 3), and she is successful in doing so, backed by thorough philosophical and theoretical research.

Stensæth brings 20 years of clinical practice to the literature, in which improvisation has been one of her core approaches. Her passion, knowledge and deep understanding radiates throughout. The author acknowledges her influences and preunderstanding of the world of improvisation from her previous experiences and training. These have included both the Norwegian music therapy community and its perspective on Nordoff-Robbins-oriented improvisation, combined with her Master's research on music therapy and the phenomenon of play. It was after this work that Stensæth was inspired to reconsider her understanding of music therapy improvisation and its

relation to the phenomenon of action (Stensæth, 2002, 2008), further stating that "play 'proves' that human beings seek transcendental experiences" (p. 8).

The book is divided into 16 chapters, with a Prelude and Postlude by the author. Chapter 1 redefines central core concepts combining the background and perspectives from many prevalent researchers and authors both from within the music therapy field and other related professions, including Bruscia, Ruud, Wigram, Aigen, Ansdell and Pavlicevic, Maslow, Aldridge, Langer, Schütz, and Schön. These references provide clarification in regard to many definitions within the paradigms of clinical music therapy. As a result, the bulk of this chapter will likely be familiar to the practising music therapist and some students, but is still able to provide interesting perspectives and parallels on core themes; for example re-defining a music therapist not just as the profession but in regards to the many "roles" that clinicians will take on with their client (supportive teacher, helper, creative musician, companion, accompanist, a "mother", a participating observer and a personal motivator) - all too easy to forget to reflect on and remember while practising in the moment.

In Chapter 2 the reader is taken through an in-depth description of the phenomenon of action and the importance of its understanding for facilitating music therapy improvisation. There are many explanations of the phenomenon in this chapter, however, the author's translates Skårberg's (1998, p. 24) interpretation eloquently, suggesting that the concept of action keeps the triad of client, music, and therapist together: "Actions are the glue from which musical forms become a net of layers of meaning" (p. 41). The chapter goes on to define different types of action and the ways in which they affect the improvisation process - action as a dialectical phenomenon, the anonymous action, the unfolding spontaneous action, actions as a means for an intention. This is followed by the discussion of the important simultaneous relationship between action and intention in music therapy improvisation, in that "an action may realize an intention, and, at the same time, an intention may realize the action (Østerberg, 1993, p.17)" (as cited in p. 46). The author also explains that,

> with Baktin's help, action is kept as a premise for music therapy improvisation and is something that comes *before* collaboration and communication [meaning that] action is required from both parties, both the client and therapist, to realize music therapy improvisation. (p. 47)

Following this overview of constructs in Chapters 1 and 2, Chapters 3-5 provide the music therapy narrative from observations of session improvisations between Jakob (author's previous long-term client), and Karla (author's pseudonym), including scores of the excerpts and a final "summing up the narrative" note from the author. These chapters represent a perspective in the discussion of her implementation of Bakhtin's ideas, a welcome 'real life' addition to the book since they illustrate the perspectives in detail, similar to that of Nordoff and Robbins' style of "indexing" - a detailed second-by-second written commentary of music therapy sessions, providing a thorough breakdown of the exchanges between therapist, client and the music itself. The narratives in this book fit the pieces of the theory together clearly for the reader reflecting on Karla, both professionally and personally, supporting Jacob "in searching for his own voice, his individual voice, his being in the world, which belongs to the larger dialogical context of which we are all part (c.f., Matusov, 2009)" (pp. 113-114).

Chapters 6-8 introduce Bakhtin and his terminology. The author graciously breaks down Bakhtin's complex writings into more 'bite-sized' ideas. Interesting points from these chapters include the fragility of communication in the work of a music therapist, and recognition that perhaps it needs support or 'mending', as referenced by Ansdell (2014) when defining music therapy as "communication repairing"; and the introduction of his term "carnival', which the author states to find useful in her understanding of music therapy improvisation, referring to "a literary mode that subverts and liberates the assumptions of the dominant style or atmosphere through humor, the grotesque, chaos and/or joy" (p. 92); also recognising its ability to regenerate and revitalise life.

In Chapters 9-13, the author transposes more of Bakhtin's thoughts regarding responsiveness in music therapy improvisation, highlighting his philosophy that

> music therapy improvisation is a *living event* which is played out in which two (or more) "consciousnesses meet dialogically" (Bakhtin, 1984, p. 72) and dialogue, responsiveness in music therapy improvisation is the process by which newer ways to respond, to mean, and to be can come into existence (c.f., Lillis, 2003). (p. 99)

This section also addresses Bakhtin's viewpoint that "by being responsive toward ourselves and others, we must ask questions, heed, respond, agree, and so forth, even in situations where communication is different" (p. 119). The Carnival perspective returns, this time relating to the topics of the imagery of carnival and the music therapist as "jester" (p. 133), providing an interesting parallel – one slightly hard to digest initially, since being labelled as a form of entertainment is precisely what we music therapists want to avoid. However, the chapter does provide a new and novel perspective to reflect on by the end.

In the final chapters the author presents, then discusses and contextualises, a theory on responsiveness in music therapy improvisation, which she calls musical answerability. Answerability is Bakhtin's term "for the process of mutual response, answering, that happens between two persons or between art and life" (p. 156). These chapters also highlight Bakhtin's ideas of levels and types of responsiveness and how these may guide improvisational approaches, with the conclusion of Chapter 14 providing a helpful five-page summary of the main characteristics of the theory.

Responsiveness in Music Therapy Improvisation: A Perspective Inspired by Mikhail Bakhtin is an inspiring text, allowing the reader to not only gain detailed insight into the workings of a real-life deep and meaningful connection created through improvisation, one which will likely spark or reignite excitement and passion for clinical improvisation, but also provides the research and reasoning backing this 'behind the scenes', thus allowing the reader to gain a more thorough understanding of the process.

This book is not a light read; however, the author does an excellent job of dividing each chapter into many smaller chunks, which is effective in helping to guide the reader through many complex topics and in connecting the dots between ideas. All clinicians and students could benefit in part from this new resource, however, it is also not a book for a reader looking for 'black-and-white' answers – instead inviting and provoking further personal thought and reflection. There are many questions asked and theories presented in this book and, as the final words from the author state in regards to whether the book is answerable, "that is not up to me to decide, instead the responsibility

lies with you, its reader" (p. 174). This book's author encourages the reader to think outside the box towards a fresh perspective on improvisation, an integral part of clinical practice with many populations. It is a welcome addition to music therapy literature.

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BOOK REVIEW

Early theoretical writings on music therapy: 1951-1960 (American Music Therapy Association with introductions by Bruscia)

Reviewed by Kathleen M. Murphy
State University of New York at New Paltz, USA

Title: Early theoretical writings on music therapy: 1951-1960 **Author:** American Music Therapy Association with introductions by Kenneth E. Bruscia **Publication year:** 2018 **Publisher:** Barcelona Publishers **Pages:** 218 **ISBN:** 9781945411373

REVIEWER BIOGRAPHY
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Early Theoretical Writings on Music Therapy: 1951-1960 is a compilation of articles written during the early development of music therapy in the United States. Kenneth E. Bruscia selected articles for this volume from the yearly *Music Therapy: Book of Proceedings of the National Association for Music Therapy* (NAMT). Each *Book of Proceedings* (1950-1962) contained full papers presented at NAMT's annual conference. As noted by Bruscia, the papers within these volumes "covered significant topics on theory, research, and practice that were evolving during the association's early years of growth" (p. xi). The papers chosen for this book focus on the early theoretical writings that laid the foundation for the development of current theoretical ideas related to music and therapy, health, and wellness.

The book is divided into 11 chapters, each containing the writings of a single author including Ira Altshuler (psychiatrist), Rudolf Dreikurs (psychiatrist), Arthur Flagler Fultz (practicing music therapist & academic program director), E. Thayer Gaston (music therapist & educator), Marcus Hahn (professor of music education), Thomas Klink (minister), Hans Kohut (psychoanalyst), Jules Masserman (psychiatrist and psychoanalyst), Leonard B. Meyer (composer and philosopher), Peter F. Oswald (psychiatrist) and Wayne W. Ruppenthal (music therapist). It is interesting to note that most authors were not music therapists. These non-music therapists, however, had an interest in music and therapy. As Bruscia suggests, consultation with this diverse group of professionals helped NAMT's founders begin to articulate the health promoting benefits of music in or as therapy (p. xii).

Each chapter is organised in a similar format beginning with a brief biography of the author and a bibliography of his works (when available). This introductory material is followed by articles written by the author that were published in a volume of *Book of Proceedings*. Each article is preceded by a

preview, a concise summary of the article and a commentary which contains a reflection of the article in terms of today's thinking about music therapy. Bruscia explains that when reading each of these writings he moved between two time locations, locating himself in the past without the knowledge gained over the past 60 years, and then in the present cognisant of today's understandings of music therapy. This reflection gave rise to two interesting points; many of the ideas expressed 1) provide the foundation for current music therapy practice, or 2) have been eschewed by current music therapy theorists without further development.

The writings in this book provided the foundation for music therapy theory, clinical practice and research in the early development of music therapy in the United States. It is interesting to see the foundations of music therapy practice and to locate these early ideas in the context of contemporary music therapy practice. Each pioneer laid a seed that in some cases has been expanded upon in the development of music therapy theory and clinical practice either in the United States or in the international music therapy community, and sometimes in both. In other instances, ideas presented are ripe for further development, as can be seen below.

Fultz (Chapter 3), Gaston (Chapter 4), and Kohut (Chapter 7) discuss how theories from related disciplines may be used to support music therapy practice. Fultz and Gaston lay the groundwork for a cognitive behavioural orientation to music therapy, an approach to music therapy practice that is common among music therapists working in the United States today (Silverman, 2014). Kohut, though, writes from a psychoanalytic perspective. It is hard to know how this particular article influenced music therapy practice in the United States as most music therapists report working from a cognitive-behavioural or humanistic theoretical orientation (Silverman, 2014). Psychoanalytic understandings of music and music therapy are more common in European schools of music therapy thought and clinical practice (Davies & Richards, 2002). As noted by Bruscia in the commentary, Klink's (Chapter 6) writings introduce the reader to many of the ideas espoused by contemporary theorists such as ritual, the creative now, and the notion that music therapy is a process rather than a behavioural operation (p. 127).

Hahn (Chapter 5) and Ostwald (Chapter 10) focus on the importance of understanding musical perception. Hahn notes that musical perception is impacted by personality, culture, musical training, and association. Ostwald points out that sound and music are perceived through similar physiological process, but notes that music adds expression, aesthetic standards, and is responsive to the social needs of the audience. Both authors note that that disability, disease, or mental disorders may impact how individuals perceive music. However, this has not been adequately researched to date in music therapy.

Altschuer (Chapter 1) and Klink (Chapter 6) present ideas that are currently used in clinical applications of music therapy, including Altschuer's concept of the "iso principle" (Altshuler, 1948). This principle continues to be cited in the music therapy literature, and in fact, has been expanded in Dileo's (2018) work with entrainment and Ridder's (2019) notions of resonance in music therapy. Klink is the first author to discuss the importance of having a here-and-now focus, being attuned, and responding to what is happening in the moment when working in group settings. These concepts are further discussed in several chapters of *Music Therapy Group Work: Sound Company* (Davies & Richards, 2002).

Meyer's article (Chapter 9) introduces the importance of understanding the role of music in a client's culture into music therapy discourse. His view on the importance of musical culture seemed to lie dormant for many years. Recently, however, there has been a call to understand the cultural significance of the music and instruments that are used in music therapy sessions (Borgo, 1998; Rudnow, 1994) as well as other cultural attributes such as ethnicity, religion, gender, and gender identity.

The remaining chapters respond to the question: "Why music therapy?" A common response to this question, even today, is that music therapy is a non-verbal, non-threatening treatment modality. The writings of Dreikurs (Chapter 2), Masserman (Chapter 8) and Ruppenthal (Chapter 11) offer support for this response. Driekurs and Masserman also discuss the social aspect of music engagement noting that interpersonal relationships are often developed in music therapy groups.

Early Theoretical Writings on Music Therapy: 1951-1960 makes a valuable contribution to the music therapy literature in that in helps the reader to understand the origins of music therapy theory in the United States. The ideas presented in several chapters, reflect the movement away from psychodynamic approaches towards cognitive behavioural approaches that was happening in the United States at the time these chapters were written. Additionally, most of the chapters lay the groundwork for further development of the theories that support music therapy.

In reading this book, it is important to remember that these chapters were written by men, some of whom emigrated from Europe to America, and others who were American. It is disconcerting to realise that the voice of prominent women in music therapy at the time were not included among the theoretical writings that Bruscia drew from. It is impossible to go back in time to know exactly why this was the case, though this was probably also common practice among all disciplines at the time these papers were presented. Perhaps a historical collection of writings of the female pioneers of music therapy is warranted.

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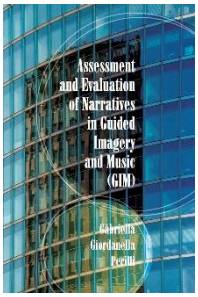
BOOK REVIEW

Assessment and evaluation of narratives in Guided Imagery and Music (GIM) (Perilli)



Reviewed by Jojo Lander

Music and Imagery Scotland, United Kingdom

Title: Assessment and evaluation of narratives in Guided Imagery and Music (GIM) **Author:** Gabriella Giordanella Perilli **Publication year:** 2017
Publisher: Barcelona Publishers **Pages:** 94 **ISBN:** 9781945411144

REVIEWER BIOGRAPHY

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As a practitioner in the Bonny Method of Guided Imagery and Music (BMGIM), I welcome Gabriella Perilli's *Assessment and Evaluation of Narratives in Guided Imagery and Music (GIM)*. Guided Imagery and Music (GIM) is an umbrella term for evolving styles of the original method (BMGIM) developed by Helen Bonny in the 1970s. Drawing from the fields of cognitive and neurological science, Perilli brings her experience to the analysis of GIM narratives. These refer to scripts generated through verbal interactions between client and therapist during GIM sessions. Established narrative coding systems are used to capture tacit or implied knowledge and bring it into conscious awareness through 're-description' (Perilli & Cicinelli, 2012, p. 1), providing a framework for how clients appraise, organise and respond emotionally to themes and scenarios in the imagery.

I find the text to be current and especially significant as we continue to build the evidence for GIM. Measuring and presenting the client experience more thoroughly may contribute to the current emphasis on client data over therapist reports as true indicators for evaluation. Perilli's contribution builds upon and reinforces the field of established GIM theory and practice by offering an additional component for cognitive assessment and evaluation of client narratives. A homework assignment is set as an extension to the BMGIM session structure and invites clients to revisit and reflect upon the listening experience and transcript, in an ordinary state of consciousness. Information can also be gathered in the form of interviews if clients require additional support from the therapist. Theoretical analysis aligns itself to established constructs and cognitive therapy narrative coding systems. These underpin a collaborative approach to self-reporting and analysis, guiding client and therapist as they formulate meaningful pathways and mutual clinical goals during the psychotherapeutic process.

The reader is guided carefully through an extensive and overarching perspective on personal narrative coherence and coding systems commonly applied in psychotherapy, with a clear summary of each chapter. Comprehensive background information sets the scene for how clients are assisted to oscillate between primary and secondary cognitive dimensions, integrating implicit or tacit

knowledge, perceived in non-ordinary states of consciousness, with more explicit coherent understanding realised in a cognitively aware state. In this way clients are invested in the meaning-making process and become active agents during the course of therapy, discovering inner resilience and constructive connections to self-identity.

Narratives in response to the music are an integral part of GIM mostly generated in a deeper or non-ordinary state of consciousness. The challenge in GIM when looking to define research methodology or create a broader evidence base is how to categorise client material that includes colourful imagery, multi-sensory responses, memories, emotions, physiological changes, metaphorical, spiritual and transformative qualities.

Perilli expands on the meaning-making processes adopted from cognitive science in relation to BMGIM client narratives, within the context of music and imagery, psychotherapy and cognitive structures. She proposes that the ability to self-integrate between 'in experience' and 'out of experience' situations in BMGIM is based on emotion as the 'basis of conscious experience' (p. 21) which holds tacit or unspoken knowledge from birth. As life becomes ever more complex, physiological and psychological patterns appear in response to events. Learned attitudes and coping strategies, although fundamental, are not always intentional.

Perilli acknowledges that imagery and metaphor can bring to the fore 'dissociative aspects of the self' (p. 41) which require reflexivity and metacognition for integration and sense of self. Throughout the duration of therapy, the re-descriptive technique is designed to highlight processes of integration, or any disruptive material, and discrepancies between primary and secondary cognitive processes in the transcript and re-description. I was curious about how these might be managed but Perilli conveyed that through the act of writing, clients will recognise, accept and articulate any themes affecting resilience and impeding their incentive to grow. The therapeutic model is intended to access underlying causes of an emotional situation before outdated automatic behavioural responses are activated. I'm not sure, however, that I understood the sequence of events here as, depending on the level of intervention, the music listening may have already triggered automatic responses. This led me to wonder about the level of music programming which could have perhaps been signposted at this point. Perilli believes that over time, with care, the mind will integrate knowledge from all modalities towards integrated coherent meaning.

Goal oriented categories are adapted from the Personal Narrative Coherence Coding Scheme (NaCCS) (McAdams, Hoffman, Mansfield & Day, 1996) and Narrative Processing Coding Systems (NPCS) (Angus, Levitt & Hardtke, 1999). The first scale is concerned with resilience, attitude and emotional regulation, the second with cognitive structural components which include concreteness, abstraction, integration, flexibility, sequencing and metacognition. Coding tables are presented with thematic material from transcripts, re-descriptions and vignettes.

My observations were that client narratives in the transcripts and re-descriptions appeared to be highly articulate and insightful, with intelligent, self-informed and reflective qualities, as one might gain with experience in this process. I was curious to know more about 'relational holding' (Gerge et al., 2019, p. 14) during cognitive assessments and whether the model was adapted or contraindicated for less resilient clients. The author has previously addressed the difficulty for some clients of alternating between tacit and explicit processes. This led me towards thinking about a synthesis of the model for clients who display lower levels of emotional resilience and are not ready to work with BMGIM

programmes. Might the re-descriptive technique play a role in building inner resources and self awareness in shortened, more supportive GIM adaptations and enable a broader range of clients to verbalise their imagery experience? This area was acknowledged briefly towards the end of this book but not elaborated on. Following the publication of this book, the author composed an article for Approaches about 'the integration of verbal and non-verbal modalities work with clients in relation to different pathologies' (Perilli, 2017, p. 230). I would have valued this information had it been included in the book.

In the final chapter, mapping of narrative coding methods, with case study narratives are organised at cognitive and emotional levels. Perilli writes that "both music and language lead to the creation of imagery by combining or modifying stored information" (p. 15). Once again, an indication of music programmes used and whether they influenced coding processes in any way would have been interesting. The book concludes with a clear synthesis of the differences between narratives from transcripts and those appearing in re-descriptions. Well-designed tables provide the reader with suggestions as to what to look for when charting progress in therapy.

Generating an ever-stronger evidence base for GIM requires a collaborative and reflexive approach to treatment goals. It is important for evaluative processes that have client self-reporting at their core to develop and remain in step with current cognitive psychotherapies, demonstrating more precisely, the efficacy of BMGIM methods as well as the development of "specific adaptations for different clinical purposes" (Papanikolaou & Beck, 2017, p. 193).

Perilli openly invites colleagues with different theoretical orientations to consider her evolving theory in practice. Therapists are welcome to offer feedback and share knowledge in a bid to test and improve reliability of the tools presented in this book. A second edition of this book might expand to include a compilation of the author's valuable writings on neuroscience and adaptations.

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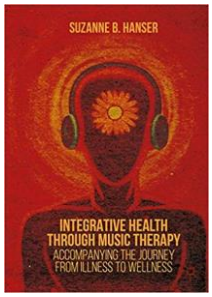
BOOK REVIEW

Integrative health through music therapy: Accompanying the journey from illness to wellness (Hanser)



Reviewed by Marianne Rizkallah

North London Music Therapy, UK

Title: Integrative health through music therapy: Accompanying the journey from illness to wellness **Author:** Suzanne B. Hanser
Publication year: 2016 **Publisher:** Palgrave **Pages:** 308 **ISBN:** 978-1137384768

REVIEWER BIOGRAPHY

Marianne Rizkallah is the Director of North London Music Therapy, Music Therapy Outreach and Enterprise Tutor for the Guildhall School of Music & Drama. She is also Vice Chair of the British Association for Music Therapy. Marianne qualified as a music therapist from the Guildhall and has worked with various clinical groups including children and adults with mental health, social, emotional and behavioural difficulties, psychosis, autism and dementia. She has worked in the NHS, the education sector, the third sector and in private practice. Marianne specialises in setting up new work, and in service evaluation. [marianne@northlondonmusictherapy.com]

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Hanser aims to marry both Eastern and Western medical traditions, exploring how music therapy traverses the boundaries within and between them. At the same time, this is a book about death, loss and grief. The author's son died aged just 28 after complications between Western antibiotics and Chinese herbs, both of which were being used to treat an infected wisdom tooth. As well as a personal interest in the subject matter, through writing this book Hanser showcases her son's writing on the topic he was most passionate about. For this review, however, I have chosen to focus on the theoretical components of the text.

Considering the motivations for writing this book, it is disappointing to report that I identified serious issues within the text. While the research is thorough, recommendations to other music therapists are both poorly constructed and unsupported by evidence, and at times I found them to be inappropriate and concerning.

The book is in three parts: the first section provides a historical overview of the Eastern medicine referred to throughout the rest of the book. The second part considers what music therapists may wish to be mindful of while beginning to work with patients or clients (or, to use Hanser's preferred term, "companions"), and the third considers practical applications during music therapy sessions.

The opening section, where a historical overview is provided, is Hanser's strongest section and, in general, demonstrates her skill as a researcher. Considering her literature review spans c.1,000 years, taking in Aristotelian thought, the I Ching and ancient Buddhist teachings, to 20th Century theories of Maslow and of mindfulness, most theories are carefully critiqued, with evidence presented where it exists.

The striking issue, however, which is not addressed throughout the book, is that Eastern medicine is not accepted by the prevailing Western medical model as a Western treatment because its perceived evidence body is emerging at best (National Center for Complementary and Integrative Health, 2019). While providing an extensive critique of Reiki, which while widely available privately in the UK is not available on the country's National Health Service, the same evisceration is not afforded for ayurvedic medicine or similar treatments. The Western medical profession does not accept any treatment as clinically appropriate unless there is proof of its efficacy; Hanser has not demonstrated convincing evidence for many of the Eastern treatments included in the book, which can therefore only be advocated for anecdotally.

The second and third parts of the book attempt a more practical set of essays aiming to be a guide to the music therapist on their "journey" with their "companion". It is unclear whether these sections are aimed at music therapists who are beginning work in new settings, or music therapists who are beginning their career. While the book seems to suggest it is a guide to all music therapists, I argue it would be more useful to trainee or newly qualified music therapists. There was unfortunately very little original thought within these sections.

From Part 2 onwards, rather than using the more common terms of 'patient', 'client' or 'service user', Hanser elects to use the term "companion" when describing the other person in the room that is not the therapist. Her justification for this is that the labels of 'patient' or 'client'

> do not value the importance of the inner healer. When the healer comes from within, the music therapist is a guide or facilitator to accompany the person's journey from illness to wellness, and the person is a companion on that journey. (p. 69)

This terminology seems to deny the power dynamic that is inherently present in any therapy. Regardless of theoretical orientation, room set-up or otherwise (even if music therapy is at the bedside, as many of the case studies are in this book, the hospital space is hardly neutral, and certainly not the patient's own), the therapist still starts and finishes the session. I argue that calling one's patient a 'companion' does not allow the patient the space to be held (in the Winnicottian sense) by their therapist who manages the boundary of the session in order that the patient feel safe enough to express themselves in whatever way they see fit. It also negates the ability of the thinking therapist who is afforded the privilege by virtue of their position to retain a separateness that allows for multiple perspectives to be considered. This is not to imply that the power dynamic is desirable, rather that it is inevitable. Having a 'companion' indicates an equal footing, which could easily be mistaken for merging, a primitive state of being where one's individual identity is bound with another and the sense of self is not present or lost (Winnicott, 1960).

Indeed, one of the most difficult aspects of working with illness or special needs is the therapist's toleration of the usually unimaginable horror at the limitations, shame, familial discord and societal othering of the ill or disabled person, and the level of pervasion this has on one's self (Bicknell, 1983). On p.137, when Hanser begins to use the term "hero" as interchangeable with "companion", it starts to feel like the author is defended against something more human in the people she is working with.

Sometimes technical terms appeared which could have benefitted from a short glossary at the end. It may not be in every music therapist's arsenal, for example, to be able to explain a medical term

such as peristalsis (p. 134). Likewise, some music therapy techniques such as facilitated breathing (p. 126) were provided without definition; I felt unsure whether I knew exactly what Hanser was referring to.

Some short sections did have some useful recommendations; active listening (p. 107), and the use of pranayama, or breath work, are suggested as being helpful in music therapy (p. 156). It would have been useful here to draw on research carried out on projects similar to the UK-based *Singing for Breathing* (Royal Brompton and Harefield NHS Foundation Trust, 2019), a service now widely available in the UK as a result of an emerging body of research (McNamara et al., 2017).

When making recommendations to other therapists, I feel some ideas would benefit from additional discussion and evidence support. Hanser talks about the therapist working "magic" (p. 91) and refers to the therapeutic relationship as framed (by the therapist) in such a manner "that their companions become their muses" (p. 91). This is a dangerous statement with little knowledge, thought or respect as to the personal boundaries that should be adhered to by both patient and therapist, in order that safe, beneficial work can be carried out.

The case studies mostly emphasise an individual's relationship with music; there seemed to be little consideration of an individual's relationship with their music therapist, or whether their therapist might also have a relationship with music. If we take the psychoanalytic idea of needing to be able to tolerate separation in relationships, and therefore gain perspective from outside of the self (Britton, 1989), it feels like Hanser is advocating operating at a much earlier stage of relating, only considering the relationships within oneself, which does not allow for further development. The lack of psychoanalytic thinking in this book, a signficiant theoretical body utilised by a considerable number of music therapists, feels like a major omission. At other points, Hanser seems to suggest that all the music needs to be in music therapy is "relaxing": this is referred to several times (pp. 105, 111, 114) and, in one instance, is taken further with the suggestion that the music provided should enable patients to "relax and focus on the positive" (p. 137).

Towards the beginning of the book, Hanser states her desire to be scientifically rigorous when considering Eastern medicine alongside Western. I would argue, however, that there is little evidence for a lot of the theoretical notions she advances. It feels less of an attempt to marry the two worlds together than it does a motion to advance Eastern medicine, and music therapy's place within it. I suggest that this book would benefit from a major rewrite.

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CONFERENCE REPORT

Open ground: Music therapy in collaboration and exchange

Polly Bowler
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CONFERENCE DETAILS

Open ground: Music therapy in collaboration and exchange
British Association of Music Therapy (BAMT) conference
9-11 April 2021, online

AUTHOR BIOGRAPHY

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INTRODUCTION

In August 2019, the call for abstracts opened for the 2020 British Association of Music Therapy (BAMT) conference. The conference was due to be held in Belfast, but in early 2020 the world gradually became more aware of an unfolding health crisis. As the pandemic progressed it became clear that it would be impossible to predict when it might be safe to host an in person event for large numbers of people from across the country. In light of this, the conference was delayed by a year and the BAMT conference committee decided to transition to an online platform.

Photograph 1: Conference logo

Online conference

The decision paid off. The existing themes of collaboration and exchange were conserved with a call to presenters to showcase their "diverse and varied" work in partnership with other professions, partners, organisations and artists. This provided a timely opportunity to look at how the profession is working with others and reaching outside of siloed practice. Paper presentations were pre-recorded,

and round tables and workshops were live to support their interactive nature. Presenters were able to elect whether their session would be available post-conference.

The programme contained a total of 127 presentations, 65% of which focussed on the conference theme of collaboration and exchange. The digital book of abstracts (a hefty PDF) was made available the day before the conference started; with so many presentations to choose from, I felt this was not soon enough. Until the abstracts were received, titles of presentations and sessions were the only guide for personal planning. The content of these titles therefore needed to be informative and accurate. However, many titles were missing key data such as client group, lifespan or type of clinical intervention.

At its busiest moments there were 15 concurrent events. I wonder if a reduction of presentations on offer could have provided delegates with a higher quality and easier experience. The counterview to this was being able to catch up on almost all sessions post-conference. Data on how many sessions were viewed by delegates post-conference would be interesting to explore.

The online status of the conference had clear pros and cons. Accessibility was increased due to reductions in costs and expenses, as evidenced by the 400+ delegates in attendance, but for some delegates the in person contact and the random connections over coffee breaks were missed. I found that random connections were still possible thanks to the virtual lounge tables where I was discussing vaccine status ethics one moment, and the joys (or fears) of wild swimming in the brown and murky waters of Bristol the next. Unfortunately, there were some sound issues even with pre-recorded talks. For a music-based profession, this was frustrating to experience throughout the weekend and could have been the result of a number of possible issues. This would be a key area to improve upon for future online offerings.

Keynotes

The Tony Wigram lecture was given this year by Gro Trondalen, and hosted by Helen Odell-Miller. It covered four research projects with a broad spectrum of client groups, topics and lifespan, and not exclusively music therapy. This range spoke well to the conference theme of “Music Therapy in Collaboration and Exchange” and set the scene for the weekend ahead.

Wendy Magee used her keynote to petition the profession. She challenged delegates in a clear and factual manner on their responsibilities and roles in examining their privilege, power, capacity to oppress and cultural competence. She asked us to consider what our implicit biases might be: “Through which lens [gender, race, ability, class, sexuality, religion] do we see the world?” And her final challenge: "What are you *actively* doing?"

The online platform did not get in the way of this message being felt in homes, studios and headphones up and down the country. Showing that you liked what was being said by clicking the blue thumbs-up button felt somewhat inadequate as an individual response but seeing the storm of thumbs that billowed up at key points in the keynote went some way to communicating how the content was being received and valued. Following Magee's challenge, the virtual audience had their potentially privileged positions further illuminated as the panellists shared the realities of their lived experiences.

The second keynote was led by Hilary Moss and focussed on her viewpoint that “arts and health is an umbrella term under which we all coexist.” From the outset, she invited arguments and disagreement. She asked if it mattered whether an intervention was music or music therapy-based, as long as the focus was: "What do you need? How can I help?" Alongside another billowing storm of blue thumbs-up, the chat held interesting opinions with many describing their experience as feeling like a breath of fresh air was sweeping through the virtual space. In contrast, others accepted the speaker’s permission and encouragement for argument and disagreement, and expressed their concerns around boundaries being blurred, potential lack of consultation with existing arts therapists, and the risks of what may or may not be transferred between non-psychologically trained artists and patients.

Presentations

Sessions started automatically at their scheduled time and after I had missed the very start of the first two it became clear that punctuality was going to be an important facet of this online conference. However, due to the presentations being available post-conference I was able to take more breaks than usual. I enjoyed being able to change my mind on which talks to attend more easily than I would have at an in person conference. The following are just two examples of the rich and challenging papers that were available that I managed to attend.

In the workshop, *Music and the unthought unknown: exploring a method for peer supervision and work groups* (Catherine Warner, Joy Rickwood and Hilary Storer), we were able to improvise with the leaders and to have an authentic experiential session of the model of group supervision being demonstrated. The experience for the attendees was powerful, with space for shared resonances and reflections. Would I have felt able to join in, in person? Would there have been a cacophony of improvisation with all of us in the same room? Perhaps not as we would hopefully have been sensitive to one another, but in this online workshop I was able to have a personal and independent musical interaction with the material with the awareness that others were alongside me having their own independent yet shared experiences.

Exploring the cultural model of disability in disability arts and music therapy with adults with PMLD (Hilary Davies) posed the challenge that the arts therapies work in the medical model of disability and outlined the cultural model of disability. In the medical model the focus is on a deficiency that needs to be treated, whereas in the cultural model disability is described as a social construct. It is the barriers placed in the way of people with disabilities by society which disable people. This thought provoking and well laid out paper from Davies was one that I benefitted from in the catch up weeks post-conference that I might not have seen otherwise.

Below is a funnel chart I created following a brief analysis of the 127 presentations (keynotes, posters, papers, workshops) which displays the topics and client groups covered by them (Figure 1). It is important to point out that there was no renewed call for submissions with the delay to the conference and that submissions from 2020 were rolled over. This seemed to be the fairest way to proceed however it meant that there may have been a lack in contemporary relevance to the content as a result. I found some unexpected results in this data. There were only 16 presentations around ‘physical or learning disabilities’ which is one of the most frequent areas of work for music therapists (Carr et al., 2017), and just ten concerning ‘palliative care or loss’ which seemed surprising considering

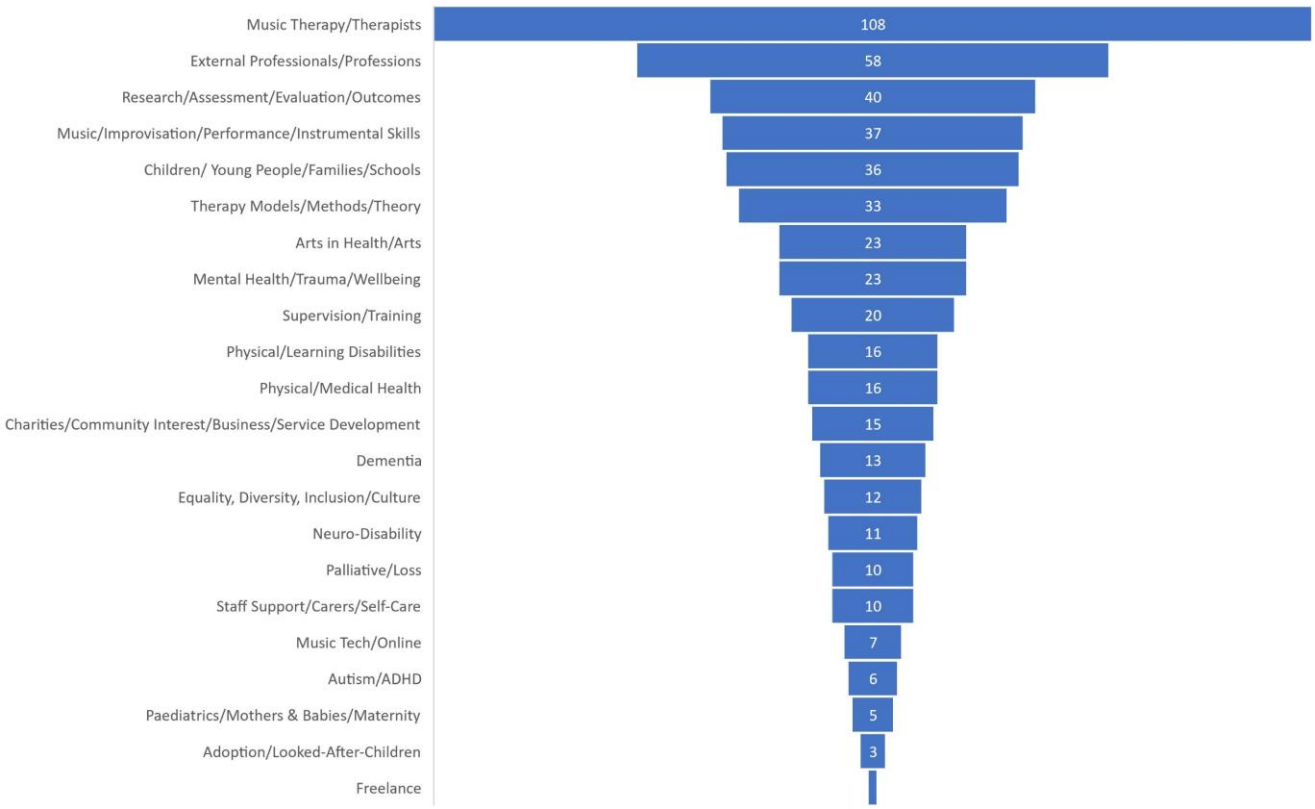

Figure 1: Number of presentations per topics, client groups and professionals

the context of the pandemic. Perhaps this topic will receive more focus in future conferences. It was encouraging to see that 58 involved 'external professions or professionals' as it demonstrated that the themes had been adhered to and kept in mind both by presenters and the peer reviewers of the abstracts.

A third of the presentations concerned the 0-20 age group of clients, which correlates with the most prominently worked with lifespan for the UK profession (Carr et al., 2017). There was an equal distribution among the other ranges including those that covered all lifespans or that did not cover clinical cases (Figure 2).

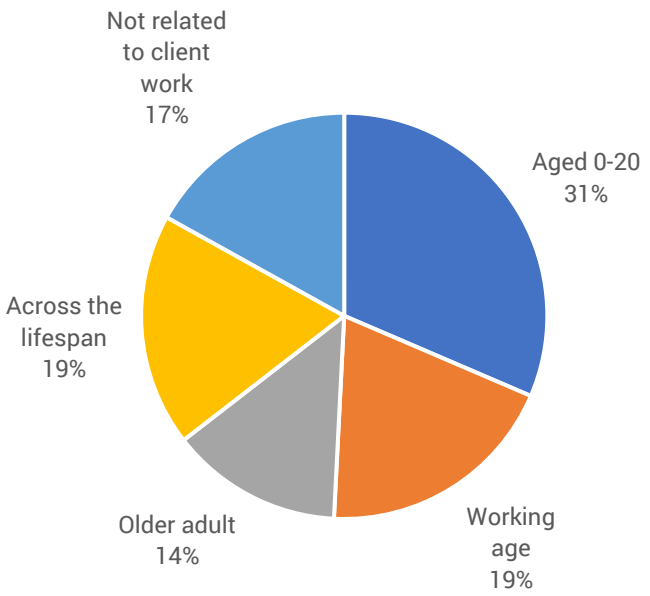

Figure 2: Distribution of client lifespan in presentations

CLOSING THOUGHTS

BAMT demonstrated strong leadership with their promotion of the *Equality, Diversity and Inclusivity* agenda that has been at the forefront in the news and our communities in recent years. They embraced an understanding of the deep relevance of this topic and responded to provocations, challenges and

confrontations during the conference with compassion and from a position of honesty.

The online conference increased accessibility with closed captions provided for pre-recorded talks, recordings being available post-conference, cost reductions and removing the barriers of geography. For some less comfortable with technology or without the required equipment or a private space, the experience could have been less accessible therefore I would be keen to see a blended online/in person approach to BAMT conferences going forward (pandemic permitting), with the advances in accessibility being maintained and developed further. The importance of co-production with people with lived experience will be vital in establishing additional accessibility options at future conferences.

As I write, I am listening to the #OpenGroundConference playlist on Spotify, just one of the excellent resources made available to delegates. After spending the previous year out in the creative wilderness of online working, the conference provided me with a grounding experience of 'coming home.' I felt a sense of reassurance and holding through the wealth of talks and workshops of my peers. The online platform sourced was impressive and BAMT managed to host a rich and stimulating event that served to nourish and replenish tired and struggling therapists and professionals.

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CONFERENCE REPORT

2021 Online Conference for Music Therapy (OCMT21)

Alison Talmage
University of Auckland, New Zealand

CONFERENCE DETAILS

2021 Online Conference for Music Therapy (OCMT21)
6 February 2021, Online

AUTHOR BIOGRAPHY

Alison Talmage is a New Zealand registered music therapist, originally from the UK. She has worked with people with diverse needs across the lifespan, and currently focuses on community music therapy and community singing for adults with neurogenic communication difficulties. Alison is a doctoral candidate at the University of Auckland. [alison.talmage@auckland.ac.nz]

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Virtual conferences have become second nature in the pandemic, but this tenth anniversary OCMT21 (Online Conference for Music Therapy, https://onlineconferenceformusictherapy.com) highlights that some music therapists pioneered digital events well before COVID-19. OCMT is a not-for-profit organisation offering an annual conference, other short symposia, purchase of archived recordings, and consultation with other music therapy organisations planning online events. At the helm is an impressive international Board of Directors – Faith Alverson-Ramos (CO, USA), Aksana Kavaliova-Moussi (Canada, formerly Bahrain), Mary Jane Landaker (KS, USA), Michelle Sieben (MN, USA), Natalie Jack (Australia), and John Lawrence (Canada).

The OCMT21 conference hosted an excellent programme of one-hour presentations over a continuous 24-hour period on February 6th (depending on the time zone from which you accessed the sessions). I imagined the conference as a giant Mexican wave progressing around the world, with music therapists tuning in and out as their time zones came online. Before registering, I considered potential information overload and Zoom fatigue, but a big draw card was the opportunity to watch some presentations live and to access other recordings later. Audience pacing was also helped by the planned 15-minute break between sessions. Recordings were available to attendees for a month, and although this is the norm, I wondered whether a month was long enough. Here in the southern hemisphere we spend February juggling the demands of the new academic year while still wanting to enjoy the height of summer, so I did not manage to view quite everything.

In Aotearoa New Zealand, February 6th is Waitangi Day, the annual commemoration of our country's founding document, the Treaty of Waitangi – a day of politics, history, cultural events, and reflection. I recalled that I had spent Waitangi Day 2020 in Australia, when the world was then preoccupied with bushfires, climate issues and the international refugee crisis, and only beginning to pay attention to COVID-19. This year I am mindful that our life here, with little community transmission of the virus, is a privilege not enjoyed by most of the rest of the world. In this context I attended the

conference hoping for reflections on the role and resilience of music therapists and music therapy participants in challenging sociocultural contexts across the world.

Two keynotes headed a programme of high quality presentations. Amy Clements-Cortés discussed music therapy in end-of-life care – I wish more New Zealand music therapists had attended this conference as palliative care is a slowly expanding area of practice here. As a consequence of New Zealand's End of Life Choice Act (Ministry of Health, 2020) music therapists working in palliative care may need to consider this new dimension of end-of-life care. As in all areas of practice, music therapists' willingness to discuss and publish on this issue will provide valuable collegial support. Vicky Abad's keynote, "The Economics of Therapy during Challenging Times", focused on business strategies and in-person and online service delivery, but also highlighted the importance of therapist wellbeing and team connectedness during and beyond the pandemic.

As OCMT issues an open call for submissions, with no central theme, the programme content was diverse in terms of populations served, music therapy methods, forms of evidence, and presentation styles. The vast scope of work reported included neonatal intensive care (NICU), special education, residential programmes for adults with intellectual disability, refugee programmes with a social justice slant, cancer care, and end-of-life and bereavement care. I appreciated Carlin McLellan's Soundtrap app workshop, and the philosophically congruent online teaching of online tools.

A presentation that particularly resonated me was a panel discussion from Elizabeth Coombes, Grace Thompson and Gustavo Gattino, about online professional communities such as the Music Therapy and Autism Network Facebook group (https://www.facebook.com/groups/591750845076918). This prompted me to pause and reflect on the function and form of my own participation in several digital communities of practice, providing rich professional connections, new learning, and sometimes challenging discussions. These ongoing relationships and conversations complement conferences and webinars, and perhaps further online special interest practitioner groups will emerge.

The conference programme featured presenters from North America (6 USA, 4 Canadian), Europe (5, including one Mexican music therapist working in Germany), Australia (3, although one discussed experience in Europe), and one international panel discussion. The majority of presenters seemed to be white women – not unusual in our profession, but perhaps future OCMT organisers could be more proactive in giving a platform to other voices. I wondered about audience demographics and how attendee evaluation might influence conference programmes year on year. Some online events also offer simultaneous translation in selected languages – for example, the 2020 Asia Pacific Community Music Conference offered English, Cantonese and Mandarin translation. While no conference can cater for everyone, perhaps simultaneous translation into English could be considered for as a strategy to increase presenter diversity, rather than requiring presentation in English. Although this might be costly, perhaps a limited trial could be considered, to gauge interest. Perhaps also, when vacancies arise, consideration could be given to increasing the cultural and linguistic diversity of the Board, to enrich existing expertise. Supplementing recordings with presentation transcripts (even if only in English) might also make the conference more accessible and truly international. I also applaud the presentations that offered live captioning, a strategy to increase accessibility. To date this has been a challenging and time-consuming service to offer, but an important consideration for all future online event providers.

While we are all dreaming of post-pandemic events and meeting together in person, online conferences continue to provide valuable online connections. The success of OCMT over ten years may well have been a factor in persuading other conference hosts of the possibility and potential of digital conferences. I hope that the proliferation of online events will not become a competition, but will continue to provide new opportunities for professional learning, international support, and dissemination of practice. And remember that in music therapy circles this trend probably started here at OCMT.

Correction notes: The author implemented a correction in her biography after the initial publication of the paper. The corrected version was published on 14th May 2021.

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APPROACHES

CONFERENCE REPORT

The 47th annual Canadian Association of Music Therapists (CAMT) conference *'Bridging distance. Honouring difference'*

Cathy D. Weldin
Independent scholar, Canada

CONFERENCE DETAILS

The 47th annual Canadian Association of Music Therapists (CAMT) conference
'Bridging distance. Honouring difference'
29 May – 14 June 2021, Online

AUTHOR BIOGRAPHY

Cathy Weldin is a retired music teacher, music therapist, and Primary to grade 6 classroom teacher who lives in Truro, Nova Scotia, Canada. She has been a member of the Canadian Association of Music Therapists (CAMT) since 1995. Cathy received her master's degree and music therapy training at Southern Methodist University in Dallas, Texas (1990) where she worked with cancer patients, children and adults with mental health diagnoses, children with autism spectrum disorder, and patients in rehabilitation. [cathyweldin9@gmail.com]

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It was my pleasure to attend the online CAMT conference from 29th May to 14th June 2021. Due to the ongoing Covid-19 pandemic, the conference could not be held in-person this year. Therefore, the conference was held online over a period of time which included two sets of 'live' weekend keynotes and panel discussions and three weeks of concurrent session video releases. In order to avoid information overload and Zoom fatigue, the video sessions were made available to conference delegates until the end of July 2021. As a retiree, I was able to take in all of the live presentations including the three keynote speakers, three of the four poster sessions, the three panel discussions, and the vast majority of the thirty-five concurrent sessions. Spreading the content of the conference over a relatively long period of time was innovative and seemed to be appreciated by many.

The conference was entitled 'Bridging Distance. Honoring Difference.' The aims of the conference committee were: (1) to provide opportunities for music therapists to connect with each other, (2) to have delegates engage in learning new ways to promote and increase the sustainability of music therapy in Canada, and (3) to have fun doing so. It is important for CAMT to expand their outreach, provide more opportunities for music therapists to connect and learn from each other, and increase the organisation's sustainability.

There were just over 400 delegates attending the conference from as far away as Australia, Scotland and the United States. The majority of delegates and presenters were from Canada but there were at least two presentations given by American music therapists. The conference offered a wide

variety of sessions ranging from 30 to 110 minutes in length. The majority of sessions were presented by MTA and board-certified music therapists, registered psychotherapists, music therapists with doctoral degrees, and music therapy students.

After listening to each of the three keynote speakers, it seemed as though the overarching theme was to remind us where we came from, why we chose music therapy as a career, and how we should define the identity of the twenty-first-century music therapist. The opening keynote, by Canadian music therapist Guylaine Vaillancourt, asked the delegates to remember what initially led them to become a music therapist. She also asked what role music played in their lives and how delegates thought they could contribute to the field of music therapy. The international keynote was given by Marisol Norris from the United States. Norris spoke about the World Congress of Music Therapy coming to Vancouver, BC in 2023 and the role of race, discrimination, and healing in our profession. The closing keynote was presented by another Canadian music therapist, Adrienne Pringle. She spoke to the delegates about how the identities of true Canadian music therapists are defined by being excellent musicians, innovative entrepreneurs, visionaries, and connectors.

I really appreciated that the Conference Lead provided an 'Everything you need to participate' email to all delegates. It provided a guide to the schedule, session links, and sponsor presentations. The conference also offered two sessions in French and provided simultaneous interpretation of all sessions into either English or French. Each presentation was assigned a password to access the video link and a second link to evaluate each session. At least six of the presenters also provided a script to accompany their videos. I found this very useful for note taking and would encourage other presenters to provide scripts in the future.

The 2021 CAMT conference offered music therapists information on a wide variety of client populations. This included more familiar populations such as children with Down syndrome and autism, to other client populations such as LGBTQ youth and asylum-seeking prenatal women. Presenters also spoke about providing support to informal caregivers, prisoners, older Jewish adults, and women with chronic pain issues. I found that those who presented either on the more common or relatively new client populations both focused on how to move forward in our profession. What are the new techniques and ideas we need to be aware of? What do we know about the language surrounding the LGBTQ community and their specific needs? How multiculturally competent are we in our attempts to reach out to diverse populations? The bottom line here seems to be that we need to be more self-aware, adaptable, creative, and resourceful.

Themes covered by conference presenters included proactive wellness, diversity, and telehealth or virtual music therapy. Given that most of us are in the midst of states of emergency due to the Covid-19 pandemic, I found the "how to" sessions very informative. The pandemic provided a focus for some of the presenters to help those of us who may be more technologically challenged than others to work successfully with our clients. Since there are specific technical and practical considerations to providing music therapy online with a variety of populations, there were many questions to be answered. Which platform should I use? Does the client have their camera at eye level and notifications turned off? Is there a caregiver present who can help with sessions? Are you wearing anything around your neck that might hit your microphone and make unwanted noise? Have you considered the client's safety, right to privacy, and possible confidentiality issues? Should they complete a more specific consent form in order to participate online? Does virtual music therapy work better with certain

populations than with others? These questions, and many others, were answered during several sessions throughout the conference.

I do have a couple of concerns with regard to the conference. Given that the last group of video sessions was released to delegates on 13th June, I wondered if this would provide people with enough time to view as many sessions as they could or would want to. It is summer in Canada, the weather is nice and, although most people are still working, many are on vacation. I was also disappointed that even though one of the conference objectives was to discuss diversity and equity, some delegates had difficulty fully participating in sessions. It became increasingly obvious that some people were unable to follow some of the proceedings and meetings, access breakout rooms, or see comments in the chat box during sessions due to disability issues or technical challenges. I certainly understand that presenting the 2021 conference online was new to all of us but would recommend that the committee intentionally prepare for these challenges in the future.

To conclude, the 2021 CAMT conference was very informative and thought-provoking. As we all begin to hope that the pandemic is coming to an end, I am hopeful that CAMT will retain at least a portion of this online format even when it becomes possible for us to hold in-person conferences again. It provided some of us with opportunities to make professional connections that otherwise may not have been possible. As a retired teacher hoping to re-enter the music therapy profession, I am encouraged and amazed by the growth of music therapy in Canada during the past thirty years. Music therapists are now working with a wider variety of populations than ever before, using new models of intervention, accessing a vast number of resources, and continuing to make significant contributions to music therapy research.

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LETTER TO THE EDITOR

Response to Rizkallah's review of the book 'Integrative health through music therapy: Accompanying the journey from illness to wellness'

Mohan Sundararaj
Independent scholar, USA

AUTHOR BIOGRAPHY

Mohan Sundararaj, MBBS MPH, is a physician and global health practitioner from India. He also graduated summa cum laude from a music therapy degree programme at Berklee College of Music, Boston, and completed a postdoctoral training in public health at Harvard University, USA. Sundararaj is currently the Director of Public Health Programs at MPact Global Action in Oakland, California. [msundararaj@post.harvard.edu]

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I am writing this letter as a response to Marianne Rizkallah's recent book review published in *Approaches* (Rizkallah, 2020). The book reviewed is titled 'Integrative Health Through Music Therapy: Accompanying the Journey From Illness to Wellness', written by Suzanne Hanser.

Integrative health must be viewed as a set of person-centred principles and approaches to enhance patient care and reduce suffering. It goes "beyond simply combining different forms of medicine and allows for an individualistic approach to patient care that incorporates the mind, spirituality, and sense of community as well as the body" (Gannotta et al., 2018, p. 1). It is intended as a practice that draws from a suite of interventions that meet the holistic needs of the patient. Integrative medicine practitioners do not view the field of integrative health from a dichotomous perspective of eastern versus western medicine but instead as a complementary and synergistic range of solutions that can help alleviate one or more presenting problems or concerns expressed by patients (Bell et al., 2002). A study conducted among resident physicians in the United States revealed that ideological differences and lack of knowledge were the primary barriers to the adoption of integrative medicine, not a lack of evidence (Ziodeen & Misra, 2018). The researchers recommend formal integrative medicine training to be incorporated within the medical education curriculum to overcome these barriers. The National Institute for Complementary and Integrative Health (2020) also advises health providers on how to access the body of evidence-based medicine, including mind-body practices such as music therapy. These conclusions suggest that attitudes and mindset also influence the adoption of integrative medicine, not necessarily the lack of evidence, as suggested by Rizkallah (2020). Further, the building of a robust evidence base is necessary across all integrative medicine practices worldwide.

Integrative medicine also views the patient and the practitioner as partners within the therapeutic process (Maizes et al., 2009). Approaches to the therapeutic relationship can therefore vary depending on the clinical context or length of treatment plans. It is true that there is a power differential between therapist and client, and maintaining a professional relationship requires strict parameters. However, Hanser urges the music therapist to "empower" the client to identify their own inner strength and resources as they enter into the therapeutic relationship. Those who face difficult diagnoses, traumatic treatments, ongoing pain and suffering, and limited lifespans may not always require a deeply psychoanalytic approach. In these individuals, the idea of a "companion" and "muse" as proposed by Hanser would be appropriate, as such an approach is more likely to elicit the intended therapeutic outcome of empowering the individual seeking treatment. Therefore, the terminology of companion does not deny the power dynamic that is inherently present in any therapy, as highlighted in Rizkallah's book review.

Finally, the emphasis of the book is indeed on the relationship with music. Throughout the book, Hanser explores the relationship between the individual and music therapist as an empowering, open, and more balanced flow throughout the journey to wellness. This may not be the traditional client-therapist relationship, but this approach is what makes the book intriguing. In Chapter Six, Hanser specifically addresses the music therapist's own journey at many levels of being, including "musical preparation."

Hanser's contribution brings focus and depth to understanding the use of music therapeutically within an integrative medicine context. The evidence base assembled in the book and the strategies suggested by Hanser are an excellent resource for global music therapy practitioners of all experience levels who may want to engage more rigorously with this rich field. Drawing on my own expertise in the field of medicine and music therapy, I would recommend Hanser's textbook for music therapists and health professionals from all fields to help promote and advance the use of music in integrative medicine.

As Hanser models for us, the field of music therapy should be open to expanding our collective ability as a professional community to use music therapeutically more effectively. Hanser is to be lauded for departing from a narrower view of music therapy in favour of an innovative integrative healing model. I would invite the global music therapy community to undertake a more open and deeper reflection on the principles of integrative medicine with consideration for a range of needs presented by diverse communities worldwide.

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