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incorporating the

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Queensland*

Abstracts



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Keynote Abstracts and Biographies

A Very Short History of Fear

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Abstract

Since its coming of age in the wake of 9/11 2001 (according to Jan Plamper), the discipline of the history of emotions has made giant strides. Less so in musicology or music theory, which has yet to absorb the ideas, facts, and methods opened up by Juslin & Sloboda's seminal collection (coincidentally also from 2001). My own approach, exemplified in this talk, is to bring historical and theoretical approaches together from the standpoint of music analysis: i.e., the analysis of compositional language and style.

The basic emotional category of fear is a useful 'red thread' to guide us through the history of musical emotion, both in the common-practice period, 1650-1910, and earlier through the pre-modern era, when our modern concept of 'emotion' did not apply. Starting with a stereotypical model of musical fear in the nineteenth century, this 'very short history' outlines a genealogy of fear, peeling back the layers of successive stylistic and intellectual paradigms, through classical, baroque, renaissance, and medieval. In the course of this journey, I shall question some basic assumptions about music-emotion research, such as the centrality of the psychology of expectations.

Biography

A graduate of the Universities of Oxford and Southampton, Michael Spitzer taught at Durham for twenty years before becoming Professor of Music at Liverpool in 2010. Chair of the Editorial Board of Music Analysis, he is a past President of the Society for Music Analysis. His many publications explore the interactions between music theory, philosophy, and psychology. He has published two monographs: *Metaphor and Musical Thought* (Chicago, 2004); and *Music as Philosophy: Adorno and Beethoven's Late Style* (Indiana, 2006). He inaugurated the series of International Conferences on Music and Emotion at Durham in 2009; and co-organized the First International Conference on the Analysis of Popular Music (Liverpool, 2013). He is currently completing a monograph titled *A History of Emotion in Western Music*, which covers more than a thousand years of music from Gregorian chant to contemporary pop. His most recent publications are on Arcade Fire's *Funeral*, in *Popular Music*, and on musical emotion and conceptual blending, in *Musicae Scientiae*.

The emotional significance of music for memory

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Abstract

The power of music to reignite memories is widely acknowledged - nostalgic music, in particular, seems capable of unlocking access to detailed events from one's remote past, even when memory is severely compromised by dementia. Attempts to utilize music to improve memory for current events, however, have been less successful, with the majority of research showing that music exposure has no effect, or even impairs learning of new information. This may be partly because it has been difficult to tailor the selection and application of music interventions in the absence of a clear theoretical framework for why music might be capable of impacting on memory processes. In this talk, a 'neuromodulation' framework is used to better understand how music might facilitate memory formation. Central to this model is the emotional significance of music to the individual, and its capacity to impact on physiological arousal levels. Evidence that emotionally powerful music meets the criteria of a neuromodulatory agent for memory is explored. This approach may provide practitioners and educators with initial guidelines as to how and when music might heighten or weaken memory formation.

Biography

Nikki Rickard is a registered psychologist with an interest in exploring emotional processes underlying mental health and well-being through music psychology, positive psychology and e-mental health technologies. Her music psychology research aims to better understand how engaging with music can promote positive cognitive functioning and manage emotional distress. She has held office as the President of the Australian Music Psychology Society (AMPS) and the Asia-Pacific Society for Cognitive Sciences of Music (APSCOM), and was a foundation Editor-in-Chief for the SpringerOpen journal *Psychology of Well-Being*. Nikki is currently the Director of Psychology at Online Education Services, and also holds positions as Adjunct Associate Professor with Monash University, and Honorary Fellow with the University of Melbourne.

Panel Discussion Abstracts

Translational Research in Creative Practice

Abstract

The investigation of the power of music to express and shape feeling states and emotions has a long history across philosophical, artistic and scientific disciplines. In more recent times, music has proven useful in scientific research seeking to develop our understanding of human emotions, the workings of the mind and social processes. Through this panel discussion, we examine and discuss those relationships that hold between music and the human condition with a focus on the contributions of the artistic perspective. Questions addressed will include: what knowledge can we apply from research in and around musical creative practice to illuminate understanding of human psychology and sociology, in all its multiple and varied forms? How can music help to translate complex research across scientific and artistic disciplines into the public domain? The panel assembled includes musicians and researchers in performance studies, composition, music education and music psychology. The discussion around this theme promises to be lively!

Panel lead

Margaret Barrett

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What's missing in music and emotion research?

Abstract

The ability of music to move us and to express emotions has fascinated listeners and composers for centuries. Since the 1990s there has been a boom in research on the topic primarily by music psychologists. As a result much progress has been made. However, published research usually focusses on progress. Panel discussions provide opportunity to look at a different aspect of this fascinating topic - what we don't know. Through short presentations and interaction with conference participants the session aims to uncover gaps in knowledge and weaknesses in our understanding of emotion in music. To do this, we have assembled a wide, interdisciplinary group of researchers with specialisations that include musicology, history and social psychology as well as specialists in music psychology. The discussion promises to be controversial and entertaining (and perhaps a little emotional at times).

Panel lead

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Problems with emotion words

Panel members

Dolly MacKinnon

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Hearing emotional histories: challenging historiographies that silence the past

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What aspects of social psychology phenomena may influence emotional responses to music?

Denis Collins

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Why doesn't musicology talk about emotion? The case of early music.

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The potential for negative impacts on well-being from music listening.

Music Origins and Symposium Session Abstracts

On the origins of music

Stephen Davies

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Abstract

I consider two approaches to the origins of music: physiological evidence of the capacity (for singing) and where in the hominin lineage this was in place; cultural evidence that music could have supplied a benefit to those who had it. This places the date as earlier than 70 kya, which is when the ancestors of those outside Africa left it. Because sophisticated music making is always found when previously isolated societies are encountered, music left Africa with the early emigrants rather than being invented anew in every society. At the other extreme, 500 kya with *Homo heidelbergensis* we find both the physiological capacities and social circumstances appropriate for music. (My view more readily matches that of Morley than Tomlinson, who have written recent books on the topic.) Recall that very young children can join the group's music making and that one does not have to be a great thinker in order to make and enjoy music. Bonding happily with one's baby, enjoying entraining with one's fellows, and chorusing across distances could all have had a place in the origins of music.

Symposium: Music and Emotions Across the Lifespan

Genevieve Dingle, Dianna Vidas, Nicole Nelson, Joel Larwood, Elyse Williams, & Leah Sharman

The University of Queensland

Abstract

This symposium presents findings of four studies about music emotion recognition and / or response in samples from all age groups and using a variety of research methods. The first paper presented by Genevieve Dingle, examines the recognition of emotion in music stimuli, inflected speech, and vocal sounds among children aged 6 to 11 years, and a comparison sample of young adults. The second study presented by Joel Larwood uses laboratory experimental procedures to address the question of whether listening to music is helpful or harmful for young adults in an evoked sad emotional state. Finally, Elyse Williams presents data on trait emotional sensitivity to music, and everyday uses of music for emotional immersion and emotional modification in young adults, middle aged, and adults aged 65 years or older. Genevieve Dingle will then summarise the symposium findings.

Children's Recognition of Emotion in Music and Speech

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Abstract

The acoustic cues that convey emotion in speech are similar to those that convey emotion in music, and recognition of emotion in both of these types of cue recruit overlapping networks in the brain. Given the similarities between music and speech prosody, developmental research is uniquely positioned to determine whether recognition of emotion cues in music and speech develops in parallel. In the present study, we asked 60 children aged 6 to 11 years, and 51 university students, to judge the emotions of 10 musical excerpts, 10 inflected speech clips, and 10 affect burst clips. We presented stimuli intended to convey happiness, sadness, anger, fear, and pride. Each emotion was presented twice per type of stimulus. We found that recognition of emotions in music and speech developed in parallel, and adult-levels of recognition develops later for these stimuli than for affect bursts. In addition, children as young as 8 years showed adult-like recognition of proud music, even though proud speech and affect bursts were not well recognized. Of the more commonly researched emotions, participants recognized sad stimuli most often, followed by happiness, fear, and anger stimuli. Finally, children's recognition of emotion in speech and affect bursts predicts their emotion recognition of music stimuli, independently of their age and musical training.

I Get Knocked Down But I Get Up Again: The effects on Young Adults of Listening to

Music when Sad

Joel Larwood & Genevieve Dingle

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Abstract

Listening to music is a strategy many people use to help regulate their emotions, particularly negative ones such as sadness. However, the literature is divided as to whether music listening to regulate sadness is psychologically healthy or unhealthy. Some research points to the potential for sad music to exacerbate a negative emotional state, particularly in listeners who are high in trait rumination. Aiming to shed further light to this question, the current study of 128 young adults (41% males; aged 18 to 25 years) induced a sad emotional state in participants and then randomly assigned them to one of three conditions – self-selected music; experimenter-selected sad music; or no music. Results showed that listening to any music allowed for a decline in sadness from the induced state, with this also found in the no-music condition. Furthermore, self-selected music more effectively lowered sadness than experimenter-selected sad music. Participants in the self-selection condition tended to listen to their preferred music, which was not typically sad. Rumination was not found to moderate the effect of sad music listening on sadness,

calling into question previous findings. The results are discussed in relation to methodological issues and implications for future work looking at the phenomenon of adaptive uses of music for emotion regulation in everyday life.

The use of music for emotion regulation across the lifespan

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Abstract

Previous research suggests that music tastes differ across age groups, yet listening to music is reported to be used as an emotion regulation strategy across the lifespan. However, no study has yet explored quantitatively how the use of emotion regulation differs across the lifespan. The current study compared the use of music for emotion regulation and emotional sensitivity to music across three age groups (18-34; 35-60; and over 65 years old). 35 Australia participants were in each age group, matched for gender (80% female) and ethnicity (100% Caucasian). The results show that older adults used music for emotion regulation significantly less than younger adults. This was true for enhancing positive emotions, fully experiencing negative emotions (sadness and anger) and calming down (from anger and anxiety). The only exception was that older adults used music as often as younger adults to improve their mood when feeling sad. Despite these differences, both positive and negative emotional sensitivity to music did not significantly differ across age groups. This indicates that music elicits positive and negative emotions equally across the lifespan, and therefore can be used for emotion regulation in older adults, just as in young adults. These results will be discussed in relation to how people of different ages experience emotions and have different tastes in music. The implications of these results for music interventions across the lifespan will also be addressed.

Spoken Presentation Abstracts (in alphabetical order according to the first author)

Investigating Musical Creativity: Does the Primary Motor Cortex Contribute to Creative Cognition?

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Abstract

Introduction

Research has identified brain regions that underpin musical creativity. To what extent does creativity in music performance depend on low-level motor areas, such as the M1? The present study used transcranial direct current stimulation (tDCS) to excite or inhibit the left M1 whilst expert jazz pianists performed right-handed improvisations. Two performance outcomes were measured: creativity, which requires novelty and appropriateness, and technical fluency, which requires fine motor skills and flawless execution of performance actions. We hypothesised that excitatory tDCS will enhance technical fluency, relative to inhibitory tDCS, freeing up cognitive resources for improved improvisational creativity.

Methods

Eight expert jazz pianists (M=9.5 years of music training) performed 10 novel jazz piano improvisations: five per block over two blocks. Block 1 contained no tDCS (baseline); Block 2 involved tDCS – either an excitatory group (anode left M1/cathode right M1) or an inhibitory group (cathode left M1/anode right M1). An expert- adjudicator rated creativity and technical fluency of improvisations.

Results

Excitatory tDCS enhanced technical fluency ($p=.05$). A trend also suggested that excitatory tDCS on the left M1 region enhanced creativity relative to inhibitory tDCS ($p=.07$). Finally, creativity and technical fluency were strongly correlated, $r(78)=.765$, $p<.001$.

Discussion

Preliminary evidence suggests that stimulation of the M1 enhances technical fluency in piano improvisations, and may also enhance creativity. Furthermore, creativity and technical fluency were correlated attributes of improvisations, suggesting that these skills are intertwined. Research with a larger sample size and multiple expert-musician adjudicators is ongoing.

Social bonding happens in time: Interpersonal synchronisation in the silent disco

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Abstract

Dance is a fundamentally social activity. Studies have begun to examine the role of movement in music for conveying emotional states, potentially revealing a useful mechanism for the communication of emotions, while others have found that joint synchrony increases interpersonal affiliation. However, music and movement studies have focused on individuals and comparatively few studies have involved multiple simultaneous participants. The present study examines the importance of synchrony in a dance setting for building interpersonal affiliation, through the use of a Silent Disco paradigm. Twenty-four pairs, recruited from a Finnish university, heard the music in slightly different timing to each other, thus forcing them to dance out of time. In a within-subjects design, it was found that pairs experienced a greater sense of interpersonal affiliation while in the synchronous condition than in the asynchronous conditions. Self-reported results were supported by behavioural measurements of interpersonal affiliation, including standing distance and relative head orientation. Further analysis found a positive relationship between Trait Agreeableness and self-reported affiliation in the synchronous condition. Synchronisation of movement is currently being analysed, and preliminary results will be presented at the conference. These findings will be discussed in the context of current research around synchrony and social bonding, and provide new insights into the role of synchrony in social dancing or therapeutic settings. It may be concluded that shared experiences are more effective at bringing us together when they are shared in time.

Music Participation and Social and Emotional Development of Young People in the Northern Territory of Australia

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Abstract

Background and Aims:

The Northern Territory has the highest rate of suicide amongst young people in Australia and urgent action is required to find cross-culturally accessible ways of assisting young people's positive long-term development. This paper is part of a PhD study investigating one of three vastly different sites whereby 23 young people participated in an urban youth orchestra outside of a government school system over fourteen weeks. The author is an educator and musician, engaging young people for positive development.

Methods:

The qualitative, ethnographic case-study utilized interviews, detailed observations and visuals, to investigate whether young people's music participation and performance was linked to their health and development through such methods as self-managing their emotions. Data was collected and coded using software to form Key Themes and Nested Themes leading to results and discussion.

Results and Discussion:

The study revealed that the young people, although initially not aware of how, did later perceive that their participation in music activities was linked to their health. Outcomes suggested social and emotional developmental aspects were affected by the process of participating in group music activities, peaking after final public performances. Music participation offers strong potential as a tool for fostering vital positive developmental aspects in young people. Deeper knowledge of this process is needed for future interventions. Discussion not only contributes to information to assist youth health in the Northern Territory of Australia however adds vital knowledge to research in the area potentially affecting youth health on a global scale.

Analytic, Descriptive and Prescriptive Components of Evolving Jazz: A New Model Based on the Works of Brad Mehldau

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Abstract

Jazz has steadily evolved from its inception in the late 19th century to the present. As is the case for other genres, musicological analytic research on jazz evolution has lagged behind its practice; consequently, there is a paucity of in-depth analytic research on the music of recent innovators. Among the most recent examples of this evolution, the works of Brad Mehldau as a solo/ensemble pianist and as a composer arguably embody some of the most compelling innovations in the field. Non-academically oriented jazz writers and fans have consistently assigned these works vanguard status, but Mehldau's output has not yet been sufficiently examined to prescribe performance methods. This presentation contains (1) analysis of improvisation contained within Mehldau's music, and definition of a new analytical lexicon derived from a holistic study of consonance, dissonance and (2) research into perceived motivation in music by cognitivists such as David Huron and Leonard Meyer.

The impact of group dynamics on audience perception of a chamber music performance

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Abstract

Group dynamics, collaboration, and small group processes are often referred to in the literature surrounding effective teamwork and organisational behaviour. Within the last decade these theories have become more prevalent towards understanding the group dynamics of ensemble musicians. Conversely, knowledge of the group processes of high-performing ensembles allows them to serve as examples for further insight into group dynamics of non-musical teams. This paper investigates the impact group (ensemble) dynamics has on a performance; not only in communicating musical material, but the management and maintenance of a self-managed ensemble through the collaborative effort of organisational tasks. Based on a larger qualitative study, a thematic analysis of responses from 30 chamber musician-participants focuses on one aspect of group process: their understanding and experience of the relationship between group dynamics and performance. The aim of this research is to identify the influencing factors that affect a chamber music performance and the audience's perception of it so that musicians can potentially create more positive performance experiences. The results display a cyclic relationship between group dynamics and ensemble performance adding audience perception as an influencing factor. The relationship between ensemble dynamics within a performance on stage, the rehearsal, and organisational aspects demonstrate an impact on successful chamber music performance. The experiences lived by the participants highlight the key role the audience plays in the continuation of positive group dynamics. These influences generate practical recommendations for performance preparation and group development.

Exploring the impact of music learning in a social context on older adults' subjective wellbeing through the lens of positive psychology

Mary Broughton, Adam Stapleton, & Emily Lane

Abstract

Previous research indicates that learning music as an older adult in a social context holds special *meaning*, which is an important element of subjective wellbeing. However, this important element of subjective wellbeing has been poorly captured in quantitative questionnaire approaches thus far. The present study applies a model of wellbeing that explicitly includes a meaning component (the PERMA model: positive emotion, engagement, relationships, meaning and accomplishment) to examine what impact music learning, specifically instrumental music making and music appreciation, in a social context might have on older adults' subjective wellbeing.

Sixteen retired-from-work Australians, enrolled in music or non-music learning classes organised by the University of the Third Age, participated in the study. They completed a

questionnaire pre- and post-program that included a set of subscales from established tests to target the five facets of wellbeing according to the PERMA model. In addition, three participants took part in a follow-up, semi-structured interview regarding subjective wellbeing and the contribution to this through their class involvement.

A significant positive change in responses on the *presence of meaning* subscale was observed for music class participants; no significant change was observed for non-music class participants. However, participants generally self-reported high subjective wellbeing at the outset of the classes; results need to be considered in light of the small sample size. Findings from the follow-up interviews with music class participants indicated that *meaning* incorporated positive emotions and relationships, as well as a sense of accomplishment through engaging with people and situations. Various components, best captured through a mixed methods approach, appear to contribute to the meaning enhancement older adults' experience through music learning. Designers and implementers might usefully apply this knowledge to deliver music learning programs that best support participants' wellbeing.

Take it to the limit: Investigating preference for extreme music

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Abstract

A substantial portion of research in music psychology has attempted to predict why we like or dislike specific examples and styles of music, and how our preferences might change over time. One of the most commonly investigated models of this nature is Berlyne's inverted-U model, which uses *collative variables* such as complexity and familiarity for its predictions. According to the model a moderate level of these variables is preferred, creating an 'inverted-U shaped' relationship. However, as the majority of previous investigations have included only typical, accessible stimuli such as popular or classical music, variables such as complexity are rarely examined beyond a low or moderate level. This work proposes that in order to test the model thoroughly, investigations must include a wider range of stimulus types. Additionally, a previously untested variable—*unusualness*—is incorporated as a potential predictor of preference. Unusualness is also hypothesized to produce an inverted-U relationship with preference.

An empirical investigation observed the relationship between preference and the three collative variables unusualness, complexity, and familiarity for five varying music stimuli. The stimuli were exposed to 94 participants ten times over a four-week period. A linear increasing relationship was observed with familiarity, which is consistent with previous results for studies limited to this number of exposures, whereas inverted-U relationships were observed for unusualness and complexity. Unusualness explained more of the variance than either of the two existing collative variables. Additionally, the two stimuli rated highest in terms of complexity and unusualness contained a substantially higher count of 'floor-effect' trajectories, in which preference ratings remain at or near the minimal level. Such a response appears to be a hallmark of extreme music, although only several previous

examples of this appear in the literature. We therefore recommend further study into music of this type.

Emotional Response to Amplitude Envelope as a Sonic

Parameter

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Abstract

Many Previous studies investigating a listeners' emotional response to sound primarily focus on the reaction sounds from daily life and music elicit in an audience. These stimuli are often labelled broadly as either "pleasurable" or "aversive" though more in depth studies have focused on musical elements such as pitch and rhythm.

Amplitude envelope refers to the variation in amplitude of a sound over time. The four elements of envelope are the attack, the time between the initial onset of a sound and its maximum amplitude, decay, the time between the maximum amplitude and sustain, sustain, which is the duration through which a sound maintains a steady amplitude, and release, the time between the sustain of a sound and silence.

The goal of this research is to dissect the parameters of amplitude envelope, study the effect that each component has on a listener's emotional perception of a sound, and identify issues for further investigation. Two surveys have been conducted to generate qualitative and quantitative data, providing information about how envelope can influence a person's emotional valence and arousal in response to sound. The qualitative survey examined fifty participants and the quantitative survey examined fifteen participants. Both surveys presented the participants with sixty-four audio samples with differing amplitude envelope characteristics. Using this information, composers and sound designers may make more informed decisions about the kinds of sounds that they choose to employ while creating music rather than relying on instinct.

The findings of this research suggested a more complex and hierarchical relationship between the individual components of amplitude envelope than initially anticipated. Altering the length of the different elements of an amplitude envelope suggested correlation with a change in the subjects' arousal rather than their emotional valence.

Visual cues in musical synchronization: How does a conductor influence timing?

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Abstract

Ensemble music presents a large-scale case of joint action, wherein up to several dozen musicians coordinate their actions. Usually, this process is directed by a conductor who maintains a visual beat and guides the ensemble through tempo changes. This experiment

tested whether musicians do indeed benefit from a conductor's movements, and how this benefit might manifest in both instrumental and ancillary movements. We designed a "virtual conductor" that was derived from morphed motion capture recordings of human conductors. Two groups of participants (musicians and nonmusicians) were shown the virtual conductor, a simple visual metronome, or a stationary circle while completing a synchronization drumming task. We measured asynchronies and anticipatory timing in the drumming task, as well as upper-body movement using motion capture and detrended fluctuation analysis (DFA). Drumming results showed that the conductor condition elicited lower asynchronies and higher prediction for both groups, suggesting that the conductor may be improving synchronization by facilitating anticipation of tempo changes in the music. DFA results showed that the conductor visual cue elicited more ordered head movements than the other two visual cues for nonmusicians only. Thus, the conductor might serve to facilitate temporal anticipation, and could also promote temporally relevant ancillary movements, especially in musically untrained individuals.

Emotion, Reception and Paradox in the Musica Nova (1559) Motets by Adrian Willaert

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Abstract

The publication in 1559 of Adrian Willaert's monumental collection of motets and madrigals called the Music Nova was greeted with great acclaim by his contemporaries and later generations of sixteenth-century musicians. The individual works in this collection were performed frequently throughout Europe and praised in theoretical writings about music from the period. Willaert was the foremost composer of his generation and maestro di cappella at St Mark's cathedral in Venice, one of the most important musical posts in Europe. His renown as a teacher as well as a composer is well documented, and his contemporaries lauded especially the compositional acumen and expressive qualities of his output. Yet the situation is radically different today: audiences, performers and scholars have repeatedly reported difficulties in identifying qualities in Willaert's music that render it attractive in terms of memorable melodies or affective textural progressions. Willaert's dense contrapuntal fabrics, especially in his motets, are often singled out as detrimental to engagement with his works on an emotional level. The present paper reassesses this situation by offering new perspectives on contrapuntal planning in Willaert's motets from the Musica Nova. I demonstrate how Willaert crafted his textures to provide a series of musical events in which heightening and lessening of affective intensity are regulated in response to text-setting concerns on multiple levels. Building on recent research in emotions and early music, I show how uncovering specific contrapuntal strategies may yield insights useful for interpretation of affective features in one of music history's most perplexing collections of works.

The beginning: Music affect in infancy

Eugenia Costa-Giomi

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Abstract

Infants and caregivers are immersed in a type of communication that makes extensive use of musical elements (e.g., Papoušek & Papoušek, 1981). Through signals produced by sung and spoken vowels, infants express their feelings and in turn elicit adaptive musical responses from attentive adults. The emotional synchrony that develops spontaneously between infant and caregiver through musical responses has been proposed as the basis of communicative musicality and the transmission of culture (e.g., Dissanayake, 2000; Powers & Trevarthen, 2009).

We studied music affect in the singing of adults and the vocalizations of infants (n=10) in a naturalistic setting. Infants wore a digital processor at home that registered all sounds from their perspective for up to 16 continuous hours. This methodology made it possible to capture spontaneous music making in the home including babbling and singing produced by the infant in the absence of adults.

We captured instances of infant vocalizations unprompted and unnoticed by adults that reflected their ability to perceive, represent, remember, and reproduce songs and melodies they had heard earlier. We also found that singing did not occur to the extent reported by the parents. Mothers sang to their infants for an average of 3 minutes a day and singing episodes rarely resulted in complete song performances; they often dissolved into verbal interactions between baby and adult. In fact, singing episodes were interweaved into other forms of communication such as speech and touch emphasizing the affective nature of interactive musical behaviors.

Examining modern-day audience's emotional responses to historical works

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Abstract

Twenty-first century descriptions of Early Modern artworks often reference emotion terms such as 'happy', 'calm', and 'uplifting', irrespective of their explicit original compositional function. Modern preference for such historic artworks also tends to signify an expression of social and cultural sophistication. Given that much art of the Early Modern period was created for an educated elite, social status and style were clearly aspects that shaped reception of them. A strong difference exists, however, between the emotional practices integral to these historical artworks and our modern day emotional experience of them. The current research aimed to consider what, if any, of the historical emotions are stirred in modern audiences? A history of emotions analysis coupled with modern psychological investigation of modern audiences offers some answers. The investigation focuses on

productions ranging from a religious oratorio by Handel (Theodora) to a curated art gallery exhibition, including a wide variety of artworks from the Early Modern period. The modern audience's subjective emotional experiences are captured in questionnaires and vox-pop interviews. The rich and complex results are discussed in terms of cultural theory such as Putman's social capital and psychological factors including personality and individual empathy. The results highlight how historical analysis and modern psychological tools can combine to uncover emotional continuities and discontinuities across time.

Music, affect and oratory: "I have a dream" and music analysis

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Abstract

Martin Luther King's iconic "I have a dream" speech is discussed from a perspective of music analysis. The author's engagement with segments of the speech to create a movement of the composition "Airwaves" involved attention to prosodic features, revealing an abundance of musical structures articulated by King's spoken voice. Designed structures of repetition and variation in the written speech interact with patterns in stress, rhythm, tempo, contour and pitch hierarchy to create a sonic structure that is amenable to consideration as a musical composition.

The Role of Visual Imagery in the Musical Elicitation of Emotions

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Abstract

Researchers propose that visual imagery may be one of a number of mechanisms involved in the musical elicitation of emotions (Juslin & Västfjäll, 2008). In Experiment 1, we investigated this proposal, by conducting a questionnaire and listening task (N=53) designed to collect information about participants' emotional and visual imagery responses to one classical and one popular piece. Participants who reported 'yes' to experiencing imagery during the listening task were asked whether their imagery occurred prior to feeling an emotion or afterwards. Results indicated that 47.5% of participants reported feeling emotion prior to experiencing imagery while 18.5% experienced imagery before feeling an emotion. In Experiment 2 we conducted a response-time study (N=49) in which participants listened to 30 short musical items and made a key-press response as soon as they: perceived the emotional connotation; experienced a change in their own emotional state; and experienced visual imagery; in three counterbalanced conditions. Among those who experienced imagery, it took significantly longer to feel an emotion than to recognize an emotion, and significantly longer again to experience a visual image than to feel an emotion. Additional correlations between self-report measures of valence, arousal, imagery vividness and response times support the possibility that visual imagery 'emerges' from emotional

experience. We conclude that emotional states may increase the likelihood of visual imagery occurring rather than imagery being a trigger of emotional states. We will discuss the implications of these results in relation to Juslin and Västfjäll's (2008) multiple mechanisms model.

Creative arts in healthcare: Staff perceptions of benefits and barriers

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Abstract

Research on the efficacy of creative arts within general healthcare is an emerging area. However, exploration of current uses and healthcare employees' perceived beneficial value of music and visual art in hospitals is limited. It is important to investigate the attitudes of healthcare employees, since their cooperation will play a key role in the provision and management of arts activities in healthcare services. This study assessed the relationship between healthcare employees' personal experiences with music and visual art and their perceived beneficial value of these arts within healthcare. Furthermore, this study aimed to identify the barriers healthcare employees perceive around integration of music and visual art within patient care. A mixed method design was developed, with a cross-sectional survey of employees of Liverpool Hospital in NSW, Australia performed ($n = X$) to evaluate personal engagement, current occupational uses, perceived beneficial value and barriers for implementation. Two follow-up focus groups ($n = 16$) were held to provide a deeper level of understanding of survey responses. We hypothesised that those who rate higher positive engagement with music and visual art will perceive higher beneficial value for these arts within healthcare. The implications of this predicted result highlight the necessity to raise awareness for the beneficial value of these respective arts in healthcare, and to provide adequate training for employees with limited arts experience. By identifying the barriers hindering integration of music and visual art in healthcare, solutions for overcoming barriers can be explored, thereby serving a collaborative industry need.

Music for Mood Regulation in People with Dementia

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Abstract

INTRODUCTION: Personalized music playlists are increasingly utilized in health-care to reduce the severity of symptoms in people with dementia. However, there is little understanding of how features of the music influence the affective responses of people with dementia.

METHODS: A factorial experiment (2x2x3) was conducted to investigate the influence of

tempo (fast, slow), mode (major, minor) and lyrics (none, negative, positive). Ninety-nine people with dementia were randomly assigned to 3 experimental conditions, listening to 3 playlists based on personal preferences. Galvanic skin response and activation of facial action units were measured.

RESULTS: Music with fast tempos caused increased arousal and reduced enjoyment. Music in minor keys resulted in increased activation of the depressor anguli oris, suggesting increased sadness in listeners. Lyrics had no significant effect on response.

DISCUSSION: As well as accounting for personal preferences, music for people with dementia needs to be carefully targeted towards the affective outcome desired.

Rhythm Imagery and Short-Term Motor Training

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Abstract

Mental imagery of rhythm has been relatively unexplored, partly due to the difficulty of maintaining tempo in silence. We have developed a Rhythm Imagery Task (RIT) to overcome this problem. The RIT presents a rhythmic piano pattern, including a bass drum on the downbeat (0.625 Hz). A continuation period then follows, where the bass drum maintains tempo, and participants imagine the piano pattern between downbeats. A piano probe is then played, and participants must judge whether the probe is accurately timed within the pattern. We carried out two experiments to examine the capabilities of the RIT. In Experiment 1, Musicians (N=26) and Non-Musicians (N=26) completed the RIT (n=80 trials) and a pitch imagery task. Performance on the two tasks was significantly but moderately correlated, suggesting rhythm and pitch imagery are at least partially dissociable. In Experiment 2, a separate group of Musicians (N=26) and Non-Musicians (N=26) first performed a motor version of the rhythm task (n=40 trials) where they tapped out the piano rhythm during the continuation period. They then completed the RIT (n=40 trials). Participants who experienced the motor practice (Experiment 2) performed significantly better than those who did not (Experiment 1). Interestingly, while performance accuracy significantly correlated with the Goldsmith Musical Sophistication Index, musicians did not perform significantly better than non-musicians. Taken together, these studies show that successful performance on the RIT requires precise timing of musical imagery. Short-term motor training significantly improved rhythm imagery accuracy, pointing to involvement of brain motor systems in rhythm imagery.

Synaesthesia, Absolute Pitch, and Musical Development

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Abstract

Idiopathic synaesthesia is a neurological condition where two or more senses are joined in an automatic and involuntary way. The relationship between certain types of sound-related synaesthesia and absolute pitch (AP) has been frequently noted, however the exact nature of this relationship remains highly speculative and lacking any empirical foundation.

This study explores how synaesthesia and AP impact on musical abilities, and on decisions to undertake higher education training in music. This study also examines the complex relationship that exists between synaesthesia and AP in participants with both conditions, and the modalities of their potential interaction.

The participants recruited for this study (n=35) comprise a self-identified sample across music students and staff of the Melbourne Conservatorium of Music, University of Melbourne. Three forms of data collection were used for this study:

1. An online questionnaire.
2. Semi-structured interviews.
3. Synaesthesia battery tests from an online platform..

Results demonstrate that the awareness of their condition can have a profound motivational effect on both synesthetes and AP possessors. Furthermore, while the relationship between sound-colour synaesthesia and AP has been observed within this study, this relationship is not symbiotic; synesthetic percepts have, however, been noted to be used as a mnemonic aid in pitch perception tasks. Results also show that both synaesthesia and AP can directly influence musical preferences and memorisation. Results extend findings in other areas of synaesthesia research by demonstrating a positive link between synaesthesia and memory, data organisation, and creative inspiration, while additionally expanding this link to include AP.

Composition and evaluation of music lyrics as a persuasive mass media smoking-resistance strategy

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Abstract

In health advertising, the untapped potential power of full-length recorded song as a persuasive smoking-resistance strategy has not yet been empirically examined. It has the

potential, however, to represent an approach that may aid in reducing the individual and community burden of smoking-related disease and death. The potential advantages of emotion/cognition-targeted lyrics and music in full-length recorded song over current strategies (such as music accompanying video and spoken words, and jingles) will be discussed. This PhD program of research: aims to develop and evaluate evidence-based persuasive smoking-resistance messages that will be delivered through recorded song and; is guided by the 'Step approach to Message Design and Testing' (SatMDT) framework (and its underlying theories). The current study reports on one phase from this research which involved the concept testing of eight messages, as song lyrics, that were designed to build smoking resistance resources (positive smoking resistance beliefs; positive affect; self-efficacy; smoking resistance strategies and; resistance and post-resistance mental imagery). The study involved an in-depth qualitative approach seeking to explore message belief type and function, strategies, cognitive and emotional responses. A total (n=13) of nine participants via (~1hr) interviews, and four participants via two (~1hr) focus groups (i.e. two participants in each group), took part in the study. Participants also provided quantitative responses via paper questionnaire. One song-lyrics message emerged clearly as being the most effective of all messages tested and will be further developed into full-length song through the PhD. The process of message development through to testing is discussed.

Attention allocation in string quartet performance

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Abstract

Background

The ability to selectively attend to a number of auditory and visual stimuli in a music performance has been established as a requirement for a successful ensemble player. The coordination of action between ensemble members has been investigated through various observational, behavioural, and neuroscientific methods. Research done by Keller into joint action coordination has highlighted this role of attention through his ARAMEP and prioritised integrated attending models.

Aim

This research looks at how ensemble musicians allocate attentional resources to achieve adequate levels of synchronicity during performance, and how this changes over the course of a rehearsal period.

Methods

This research was a case study of a string quartet preparing the fourth movement of String Janáček's *Quartet No. 1* (string quartet). A self-report recall task was completed on three separate occasions over the rehearsal period. A thematic analysis, informed by Keller's model of attention, was conducted on the self-reported data.

Results

Findings demonstrated a difference between the planned movement of voluntary attention

and the automatic response of involuntary attention. Furthermore, the elements to which members of the ensemble selectively attended changed over time as the players became more familiar with each other and a degree of automaticity with practiced elements was achieved. Results showed that ensemble members integrated various streams of auditory information in order to judge how aspects of playing were matching the rest of the ensemble. Limitations of this study include the necessary subjectivity of the players involved in the self-report recall task. Understanding the processes involved in developing synchronised ensemble performance might be useful in performance training, by assisting musicians to rehearse in a more efficient and effective manner and enhancing performance outcomes.

Higher music education quality and effectiveness: Affected gender expectations

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Abstract

Studies suggest that female expectations towards imminent higher education generally are more positive (e.g., Krause, Hartley, James, & McInnis, 2005) and that they select creative arts disciplines like music more so than males (e.g., OECD, 2011). Observing commencing music undergraduate expectations across three Australian institutions (2013), Harvey, Davidson and Nair (2016) found that all participants share positive expectations. Females outnumber males and further investigations of the macro data suggest female undergraduates are more positive in their expectations than males. The current paper proposes alternative perspectives to these findings. For example, how are gender perceptions divergent at the micro level; from where do music undergraduates formulate their expectations; how are their expectations affected differently through their pre-university experiences/training? Measurement parameters include: usefulness and importance perceptions (e.g., Wigfield & Eccles, 2000) towards unknown/tested units of study (e.g., Fishbein, M., & Ajzen, I., 1975), pre-university tuition focus, daily practice, and instrument specialisation. At the micro level are several interesting nuances. For example, only one institution consistently reflects the female positivity statistic. Further, while more females commit to daily deliberate practice of between 1-3 hours, more males commit to over 3 hours per day—the majority of these hail from one institution. Music history is universally unappealing, one institution suggesting that males specifically are more united in this perception. Interestingly, more males consider pre-university ensemble based tuition more important than solo. At the time of the study (2013), females and males from one institution received their most important music instruction at school

Goodness-of-fit and stability ratings in uniformly, randomly distributed pitch sequences

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Abstract

Since 1979, probe tone experiments have procured insight into the cognition of tonality in music. Participants are first played context setting stimuli, after which a probe tone is sounded and participants are asked to rate how well it “fits” the context. The context is composed in order to establish a tonal centre and the ratings are assumed to describe the stability profiles it produces. Data from these experiments has been modelled by the statistical prevalence of notes in a tonal music corpus but more accurately, more recently by the spectral pitch similarity of the probe to the notes in the context. Under the hypothesis that the stability profiles might emerge intrinsically from the notes of the context stimulus an experiment is devised wherein the notes of the context – diatonic, ‘harmonic’ or ‘melodic’ scales – are uniformly, randomly distributed. All chromatic notes are probed, along with common triads; participants rate either goodness-of-fit or stability on a 7-point Likert scale. Goodness-of-fit ratings are found to differ insignificantly to stability ratings apart from in a few specific cases, including the leading-tone and leading-tone triad. Spectral pitch similarity is seen to outperform prevalence models, with an r^2 value of 0.844 across the 3 scales for probe tones and 0.727 for triads. Either tonality indeed emerges intrinsically or learnt stability profiles are robust enough to be triggered by such a stimulus design. The experiment provides a modus operandi for further work testing novel microtonal scales to explore possible bottom-up explanations for tonality.

Self-other integration and segregation is modulated by the congruency of shared goals in musical ensemble performance

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Abstract

Musical ensemble performance is a social communicative art form that showcases the ability of groups of individuals to pursue shared goals by coordinating their actions with high levels of temporal precision and flexibility. Such coordination requires self-other merging (integration) while maintaining the distinction between self and other (segregation). Two studies of piano duos investigated how the balance between self-other integration and segregation is modulated by the congruency of co-performers’ goals related to tempo. In one study, small incongruencies in tempo goals (induced via instructions that biased each performer towards a slightly different tempo) encouraged self-other segregation. In the other study, large incongruencies in tempo (induced via instructions for one performer to accelerate while the other decelerates and vice versa) led to co-performers compromising

their individual goals in favor of self-other integration. Together, these findings demonstrate that there is a threshold at which it becomes necessary to revise and modify one's own goals in order to achieve precise interpersonal coordination. The balance between self-other integration and segregation is thus influenced by the degree to which individual goals differ. The size of this difference may be affected by factors including musical experience and idiosyncratic preferences regarding musical expression.

Is the BRECVEMA model useful for historians?

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Abstract

In recent decades, History of Emotions research has attempted to synthesise a number of contrasting theories about emotions (primarily from anthropology and the social sciences) in an attempt to establish how evidence of past emotional experiences might be recovered and interpreted by historians. While significant strides have been made in this area, the place of music in the history of emotions remains problematic, since the way music induces emotions is itself a contested area of scholarly inquiry. However, the BRECVEMA model of music perception, recently developed by Patrik N. Juslin and his colleagues, has opened up new ways of understanding the relationship between music and emotions. This paper explores how the BRECVEMA model might be applied historically, drawing upon examples from the author's PhD thesis (in progress). It is hoped that this paper will encourage further discussion and feedback on how the BRECVEMA model might be used to help explain how certain features of musical structures became emotionally significant in particular historical contexts.

More than words: Investigating the involvement of phonological working memory in earworms for instrumental music

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Abstract

'Earworms' –the experience of a catchy melody that repeats endlessly in the mind– are a common occurrence for many. While mostly reported for songs with lyrics, anecdotal evidence suggests that the phenomenon can be triggered by instrumental music, particularly for those with extensive music training. Previous research demonstrates that earworms for vocal music engage phonological resources, manifesting as 'inner singing'. However, it is unclear whether this subvocal activity reflects rehearsal of only lyrics or also musical aspects of the earworm. Thus the present study aimed to investigate the role of phonological working memory in instrumental earworms, and to explore potential differences among musicians and non-musicians. Five popular instrumental tunes were selected as potential earworm candidates, and five series of random tones generated

(auditory stimuli unlikely to elicit earworms). Musicians ($n = 20$) and non-musicians ($n = 20$) undertook a serial recall task in silence (baseline), then while listening to either instrumental music or random tones (alternating, within-groups), and again in silence. For the non-musicians, there was evidence that certain tunes continued to be subvocally rehearsed during the silent block following presentation, thus producing phonological interference. By contrast, following exposure to random tones, performance was similar to baseline. Musicians performed considerably better at the serial recall task than non-musicians, creating a ceiling effect which reduced the apparent size of the effect. This study is the first to investigate the cognitive processes underlying instrumental earworms, and findings obtained will inform an important area of debate, regarding the extent of overlap between music and language in working memory.

Musical Engagement and Emotion Regulation in Undergraduate Students

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Abstract

Musical engagement has been identified as an effective and widely employed strategy for the regulation of affect, particularly among young people (Lonsdale & North, 2011). The relationships among emotionally-directed musical engagement and prior musical learning and experience, however, have yet to be explored in depth. This research aims to examine the strength of both formal musical training and active music-making as predictors of the propensity to use music to meet emotional needs.

The MUSEBAQ questionnaire (Chin et al., 2017), designed to explore relationships between musicianship and motivations for engaging with music, was administered to undergraduate students age 17-24 ($N = 470$) at a mid-sized Canadian university. Participants provided information about prior formal musical training as well as frequency of active music-making. Personal tendencies regarding musical behaviors related to emotional self-regulation were also reported. Regression analysis revealed that our overall model was significant ($p < 0.001$), but assessment of individual predictors revealed that in our sample, formal musical training was not a significant predictor of the tendency to use music for emotion regulation ($p = 0.325$). Frequency of involvement in active music-making, however, was found to be a significant predictor ($p < 0.001$). Additional data is currently being collected.

While prior research has often focused on formal musical training as the most important predictor of musical behavior, these results suggest that other elements of musicianship may be more significant in certain cases. This presentation will discuss results and advocate for a broader conception of musicianship within this field of study.

Continuation and cessation of music participation

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Abstract

While a surge of research has begun to examine music investment and well-being, very little has considered how best to promote life-long investment in music across the lifespan. Indeed, the current research aimed to address the significant research gap which concerns how and why individuals continue to participate or, instead, cease their participation in musical activities. The sample consisted of 383 Australian residents (aged 17-85, Mage = 32.66; 66.60% female) who were either currently participating in a musical activity (55.60%) or had ceased previous participation in a musical activity (44.40%). Participants completed an online questionnaire, which included measures of music background, engagement, and preference; quality of life; self-esteem; personality; BEM sex role inventory; as well as demographic questions. A Generalized Linear Mixed Model analysis concerning participation status was statistically significant, $F(14, 264) = 6.276, p < .001, \eta^2 = .250$. How important music was in the participants' life, a preference for reflective and complex music, and the WHO-Bref's psychological quality of life dimension were all positively associated with currently participating in a musical activity, while peer musical engagement when growing up was negatively associated with current musical participation. It is also interesting to note that variables, such as gender, age, and measures of musical background experience, were not significantly associated with continuing to participate in musical activities. Collectively, these findings indicate those factors that are associated with participants continuing or ceasing musical activity, and form a clear basis for educators' attempts to intervene in such.

Music at the gym: Insights from a streaming jukebox system

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Abstract

Music streaming services have increased the possibilities for how and where music is accessed and heard, both individually and collectively. With regards to collective listening, Nightlife music provides a streaming 'jukebox' recommendation system used across Australia. In particular, when utilized in gyms, patrons are provided with the ability to control the music heard while exercising, via adding personal recommendations to the gym's collective playlist. Thus, we were able to consider one of the most common contextualised everyday listening situations using large scale data. In particular, the collected system data regarding recommendation and selection patterns were analysed. Preliminary data concerning the system's data for gym usage on a single day in August 2017, indicates that lodged song votes resulted in 18,039 songs played. Indicating high user investment, the overwhelming majority of songs (86.1%) were selected by individual users,

as opposed to the 13.9% selected by gym managers. Interestingly, while users can use their personal devices to interact with the system, 59.3% of song selections occurred using a kiosk, or wall-mounted unit, demonstrating that a jukebox application maintains its relevancy in today's digital age. Additional analyses to be discussed will concern song choices with regard to song characteristics (e.g., BPM), as well as time of day and differences between low and high engagement with the jukebox system. Together, these findings provide an interesting in-depth insight into everyday music listening, and music selection at the gym in particular.

Effect of tone frequency on neural entrainment to rhythm: Superior role of bass

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Abstract

The spontaneous ability to entrain to a periodic pulse-like beat is central to the perception and production of music across cultures. There is increasing evidence that this ability is supported by a selective entrainment of neural populations to the beat, even when the beat is not physically marked by sounds as in syncopated rhythms. However, the frequency of the tone conveying the rhythm might also play a key role, as in music, low-pitched instruments usually carry the rhythm and drive people's movements to the beat.

To investigate the role of tone frequency in these neural processes, we recorded the EEG while 14 participants listened to rhythms conveyed either with high- or low-frequency tones. We found that the selective neural entrainment to the beat was greater for the low-frequency tone, especially when conveying the more challenging syncopated rhythm. This effect could not be accounted for by differences in loudness between low- and high-frequency tones, as a second experiment with a contrast of loudness alone did not yield significant differences across conditions.

Together, these results indicate a privileged role of low-frequency spectral content in shaping the brain responses to rhythm. The greater entrainment of neural populations to the musical beat delivered by low-frequency tones could account for the widespread practice of using bass instruments to carry the rhythmic foundations of a musical piece and to make people move to the beat.

Investigating the Role of Australian Orchestral Musicians in the Artistic Decision-Making Processes: Two Case Studies

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Abstract

Orchestral musicians report dissatisfaction, due to a lack of opportunities to influence their orchestras' artistic decision-making processes. This circumstance potentially stems from

musicians feeling underutilised as decision makers or co-collaborators in artistic processes. The aim of this project is to investigate the current and prospective involvement of Australian orchestral musicians in their orchestras' artistic decision-making processes. Musician's involvement in three key areas of orchestral organisational operations is examined: artistic planning, the rehearsal setting, and professional development, chamber and education programs. Musicians' experiences and perceptions of individual creative fulfilment within the workplace are examined according to Maslow's hierarchy of needs. Participants are musicians from two contrasting organisations: An Australian state symphony orchestra (governed), and an Australian conductorless chamber orchestra (self-governed approach). The project follows a convergent parallel mixed methods design, collecting data from questionnaires and interviews. Findings indicate that the symphony orchestral musicians are creatively unfulfilled, with organisational hierarchies hindering their capacity to exert influence on artistic planning. In comparison, the conductorless chamber orchestral musicians report a lack of creative fulfilment within the rehearsal setting, due to orchestral leaders driving interpretative decisions, and mixed opinions on the current rehearsal methods. This research provides Australian orchestral organisations an insight into the creative needs of their employees, and the organisational procedures that could to be implemented to support musicians feeling valued in their careers for the mutual benefit of the organisation.

Exploring the Impact of Using Instrumental Music or Nature Sounds in a Structured Mindfulness Programme on Psychological Wellbeing in Healthy Adults

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Abstract

Existing mindfulness programmes utilise the breath to enhance psychological wellbeing across healthy and clinical populations. Separately, listening to music or nature sounds promotes psychological wellbeing. In this study, we explored if incorporating music or nature sounds with mindfulness activities in a structured mindfulness programme would augment psychological wellbeing and the effectiveness of mindfulness treatment, and reduce attrition rates, compared to traditionally using the breath in mindfulness activities. We randomly assigned 79 healthy adults to one of three conditions: Control (breath), Music (mindfully listening to instrumental music tracks), and Nature Sounds (mindfully listening to nature sound tracks). Participants attended eight weekly group sessions, and completed a number of measures of mindfulness skills and psychological wellbeing (Brief Resilience Scale, Depression Anxiety Stress Scale-42, Outcome Rating Scale, Five Facet Mindfulness Questionnaire, a session rating questionnaire, and heart rate variability). Following the mindfulness programme, only Music and Nature Sounds conditions had significantly decreased within-condition depression, anxiety, and stress levels. Both Music and Nature Sounds conditions also had significantly reduced attrition rates relative to the Control condition. However, there were no significant between-condition differences in depression, anxiety or stress in Music or Nature Sounds conditions, compared to the Control condition.

Our results imply that music and nature sounds enhance the efficacy of mindfulness activities, augment psychological wellbeing, and reduce attrition rates. The next step involves implementing the current study's protocol with a suitable clinical population, and to determine specific mechanisms involved in combining music listening with mindfulness activities.

How I wonder what you are. An interpretive phenomenological analysis of seven-year-old children's emotional engagement in learning the cello

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Abstract

How do children engage with music when they commence learning a musical instrument? How do children's thoughts, emotions and engagement with music evolve over time and within the context of musical development? How does the instrumental teacher nurture children's innate curiosity and promote skill acquisition while teaching abstract concepts of musical expression? How does early learning impact future musical engagement? These questions are addressed in this longitudinal Action Research project that tracks fourteen seven-year-old children's lived experiences of learning to play the cello across 18 months. Interpretative Phenomenological Analysis of interviews with the children and their parents are integrated with the teacher-researcher's observations in order to investigate how the child perceives, adopts and incorporates motor, cognitive and expressive skills and become emergent musicians.

Emotion for children in this research is used descriptively, experienced affectively and communicated abstractly. Firstly, emotions are one of children's primary descriptors for their experiences in learning the cello. Exploration of these emotions reveals complex perceptions of music learning. The children identify elaborate invented inner musical worlds and explain sophisticated musical behaviours around skill development revealing levels of personal competency. Secondly, children report that playing cello and engaging with music physically can be an emotionally transformative experience for them. Thirdly, learning that emotion can be expressed abstractly through mastery of physical skills and techniques on the cello can be revelatory and inherently motivating for the child. These findings have the potential to inform music education practice in order to promote children's continued musical engagement.

The Effect of Memory in Inducing Pleasant Emotions of Musical and Pictorial Stimuli

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Abstract

Music is known to evoke emotions through a range of mechanisms, but empirical investigation about the mechanisms for different emotions is sparse. In this study we investigated how affective experiences to music and pictures vary if induced by personal memories as opposed to mere stimulus features. Prior to the experiment the participants were asked to select eight types of stimuli (4x music, 4x picture) according to distinct criteria concerning the emotion induction mechanism and valence. In the experiment the participants (N = 30) rated their affective experiences to the self-chosen material. EEG was recorded throughout the session. The results showed certain interaction effects of mechanism (memory vs. stimulus features), stimulus valence (pleasant vs. unpleasant), and stimulus modality (music vs. picture). While effects were mainly similar in music and pictures the findings suggests that when personal memories are involved positive emotions remained stronger in the context of music even when the music was experienced unpleasant. Memory generally enhanced social emotions specifically in pleasant conditions. As to sadness and melancholy, object features didn't seem to evoke such negative experiences. These emotions increased strongly by the involvement of memory, particularly in the condition of unpleasant music. Analysis of EEG-data corroborated the findings by relating frontomedial theta activity to memory-evoking material. The study generally evinced the facilitating capacity of participant-selected stimuli in evoking emotions in experimental settings.

Comparing short-term benefits of singing, listening, and no-music group activities on socio-emotional wellbeing in older Australians

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Abstract

Background and aims: Choir membership has demonstrable benefits to wellbeing, but it is unknown whether singing groups may be a more beneficial option over other social activities to promote wellbeing for older adults.

Methods: The research reported here includes 2 studies. The first compares positive and negative affect ratings, energy levels, and social connection indices immediately prior to and after a choir (singing group), exercise (group with music listening), or discussion (no music

group) session for older adults. The second uses an observation checklist for identifying physical manifestations of changes in mood and energy across the groups.

Results: In Study 1, a 2-way ANOVA demonstrated no significant interaction effects. There were effects of time on the measures of positive affect and cohesion (increase) and negative affect and tiredness (decrease). In Study 2, choir members demonstrated significantly more behaviours categorised as high positive affect/high arousal and significantly fewer behaviours categorised as low negative affect/low arousal by session end when compared to the exercise groups.

Discussion: While choirs are known to improve socio-emotional wellbeing, this research provides a unique comparison with a listening/movement condition and a no-music group. The lack of significant findings for Study 1 may indicate that other social groups can provide similar wellbeing benefits as those achieved with group singing. However, the findings from Study 2 may mean that traditional instruments to measure short-term changes are not sensitive enough to record subtle differences.

The Rhythm of Life: The Perfect Rhythm of Morse Code

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Abstract

Morse code is a unique exemplar of the inherent complexities of rhythm. The urgency of learning Morse code in wartime presented new challenges in unfamiliar territory. My research explored the strategies used to teach and learn Morse code in WWII and investigated the resourceful techniques used by the Women's Royal Australian Naval Service (WRANS) in an empirical study.

In the first study, five WRANS described a series of techniques to learn Morse code, including rote and repetition, visualisation and pattern recognition, intoning and mnemonics, and music. Music provided effective training by matching the rhythmical properties of Morse code to music. Learning Morse code with music was described as a way of making sense of the 'rhythm' and 'shape' of the Morse code letters.

The second study examined the effectiveness of learning Morse code with the aid of music. Novices formed two groups, Control Group and Music Group. Results confirmed the effectiveness of music training in three Morse code letters, Q, V, and A in two experiments, the first with known Morse code letters (Q V A) and the second with unknown letters. The Music Group accurately identified 90% of known and unknown Morse code letters compared to the Control Group with less than 50%.

The investigation of learning and teaching strategies of the WRANS showed that musical rhythm influenced the skill acquisition of Morse code and the perceptual test suggests that current work in rhythm perception extends beyond music pedagogy and has further implications for all cognitive function.

Cross-cultural teaching, learning and performance strategies

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Abstract

Background and Aims

Practice-based research in transcultural music studies motivated enquiry into cross-cultural education and performance issues. The purpose of the study aimed to discover how musicians taught, learnt and performed music distant to their social, cultural and musical background, then identify and examine the cultural, contextual and transmission issues encountered and strategies utilized.

Methods

The research constituted a qualitative multi-case study and used methodological triangulation and processes of grounded theory to collect, analyze and integrate the data. Throughout the study, semi-structured interviews with ten adult Australian musicians were recorded over a three-month period. Music lessons, which included community gamelan groups and Turkish classical music lessons conducted with Turkish-Australian and Australian University students' were observed and recorded using field notes and video. Performances of Balinese and Javanese gamelan and a Sydney-Bulgarian choir were also observed and recorded.

Results and discussion

The findings were broad ranging and discussed over three chapters. The results indicated that musician's encounter multiple social and cultural issues and differences in transmission that confront and change feelings of preconceived views and ideas of teaching, learning and performance. Final analysis of the data revealed that musicians followed a similar learning strategy and pattern to alter their perception, termed bridging, adapting and assimilating, which aligned with findings in the practice-based project. The thesis concluded that cross-cultural music experiences have the potential to transform the perspectives of adult musicians' pedagogical and performance approaches and attitudes.

Orthodoxy, Fear and Music in Education: a transdisciplinary historical exploration

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Abstract

This paper presents a distillation of literature from a range of disciplines and historical periods concerning the notion of orthodoxy and fear of music in education, with the aim of interrogating commonly held assumptions about music in contemporary educational and performance contexts. Researchers such as Falk (2004) and Barras, (2014) characterise the origins of music as a basic and necessary development in human communication. 'Music' is

defined broadly in this context as an embodied communicative tool, a form of creative social expression that is not subjected to the rigid criteria generally applied to music making in institutional settings that often result in a fear of public performance. This paper aims to interrogate the institutionalisation of music, characterised as the development of orthodoxies that remain largely unquestioned, undefined and unacknowledged in modern research and educational policy. In particular, this paper will explore examples throughout history where the accepted norms of music and education have been questioned, and how such questioning was perceived as a profound attack upon fundamental principles. Duerkson (2003), for example, notes the similarities between the arguments of the fundamental Christian right and those defending traditional music educational methodologies. Utilising the principles of transdisciplinarity, this paper explores a broad range of literature, both historical and current texts, from disciplines including pedagogy, musicology, theology, philosophy, etymology and psychology. The aim of this study is to establish the fundamentalism of musical orthodoxies, so that problematic assumptions concerning creative practice and pedagogy can be interrogated towards a healthier musical society.

Blurring the lines on copyright decision-making: Do familiarity and liking for a song predict judgements of musical similarity?

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Abstract

Judgements of musical similarity are not objective, and may be affected by familiarity and expertise (Schubert & Stevens, 2006). We investigated whether familiarity with and liking for a song predicts judgements of similarity and musical copyright infringement in trained and untrained listeners. We recruited 374 participants (61 expert, 312 non-expert) to complete an online survey. Expert participants had received a mean of 14.4 years' musical training (SD = 4.5; Non-experts, M = 1.7 years, SD = 2.5). Participants listened to 60 pairs of songs from real-world copyright cases. Participants rated familiarity and liking for the plaintiff's and defendant's songs, how similar both songs were overall, and the similarity of the melody, contour, harmony, rhythm, accompaniment and arrangement. Finally, participants rated whether the defendant's song constituted copyright infringement. Linear mixed-effects models showed that liking for the plaintiff's song predicted guilt of copyright infringement, but liking the defendant's song predicted a not guilty decision. Liking for the plaintiff's song predicted perceived similarity of all musical elements, however, familiarity with the plaintiff's song negatively predicted similarity in harmony, rhythm, and accompaniment. Familiarity and expertise predicted increases in similarity, showing that increased knowledge permits more sophisticated decisions. Perception of musical similarity is complex, and may be biased by liking for, as well as past knowledge of a song. This presents implications for jury decision-making in copyright cases. Given that these biases were present in expert as well as non-expert musicians, this may explain discrepancies in judgements by expert witnesses for the prosecution and defense.

Drumming up harmony: How rhythmic synchronisation fosters pro-social behaviour

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Abstract

Rhythmic synchronisation is an integral part of group music making, and a form of interpersonal coordination that has been demonstrated to foster pro-social behaviours. While several candidate mechanisms have been proposed to support this effect, empirical data is scarce. Furthermore, progress in the field is hampered by methodological concerns that limit existing conclusions. To resolve these issues, we tested social, non-social, exact (identical) and complementary synchronisation using a dyadic drumming paradigm, and measured reward and pro-sociality using an economic game. We employed a novel strategy to manipulate task success by tightly controlling rhythm difficulty. Results suggest that reward activation contributes substantially to observed pro-social effects of exact synchronisation. However, during complementary synchronisation reward activation and social cognition interacted to yield the most powerful pro-social effects. These findings can inform future research and support the development of music interventions that maximise pleasure and engagement while promoting pro-sociality and social cohesion.

Rehabilitating the self through song: Evaluating an inpatient therapeutic songwriting program for participants with acquired neurological injury

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Abstract

Background: Adjustment to acquired neurological injury involves a process of making meaning of the injury and associated impairments. Identity plays a key part in this process. Early post-injury changes in identity, wellbeing and distress remain understudied, with limited evaluation of identity-focused rehabilitation interventions in subacute rehabilitation. Music therapy offers a promising means of promoting identity re-integration for inpatients. **Aim:** The current study sought to gauge the efficacy of a therapeutic songwriting program for inpatients with acquired brain or spinal cord injury delivered in a Victorian subacute rehabilitation centre.

Methods: Twenty-nine inpatients (mean age = 46.62 years, SD 18.57) participated; fourteen undertook a six-week therapeutic songwriting program, while others received treatment as usual. The intervention comprised 12 songwriting sessions across six weeks, focusing on past, present and future self in song. Both groups completed measures of identity, wellbeing and distress before, during and after the intervention.

Results: Significant interaction effects were detected for the Identity, Behaviour, Physical, and Conflict dimensions of the Tennessee Self-Concept Scale (TSCS-2), with experimental participants showing greater shifts over time. A significant interaction effect was also found for ABI participants on the Conflict dimension.

Discussion: The current study provides preliminary support for the role of music therapy in rehabilitating identity in the early stages post-injury. The small sample size makes robust conclusions difficult, however future research with larger-scale samples is warranted to further understand early identity and wellbeing shifts, and the role of music therapy in shaping these.

In music listening research, what is musical engagement?

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Abstract

The term 'musical engagement' is used widely throughout music psychology literature, and covers a wide range of concepts, including music education and training, time spent listening, and/or instrumental playing. As the term is broad in scope, its interpretation is often researcher-driven and the assignment of meaning to it may be completely subjective which can cause issues when interpreting published results. The present research investigated how musical engagement is used in relation to listening behaviours: firstly, how it expresses different types of listening behaviour and, secondly, how it quantifies individual engagement in music. A literature search conducted using the title keywords of 'music (or musical) engagement' and 'music listening' identified a sample of 942 journal articles published between 2006 and 2016. The results of a content analysis indicated that when musical engagement was used to describe types of music listening, it included passive/active listening, or the method in which music is accessed. When the term was used to quantify individual engagement in music, meanings ranged from the importance placed by the individual, to the type and level of activity, and so on. Moreover, data collection methods varied from researcher- developed questions, self-report measures, and that derived from Experience Sampling Methodology. The findings, therefore, indicate the nested complexity of musical engagement as a research concept, and the need for clearer variable definition for future research. Discussion of how to remove the ambiguity of interpretation from musical engagement will be of great benefit to the future of music psychology research.

Impressions of the linguistic sound of lyrics in music

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Abstract

The relationship between melodies and lyrics in songs has been studied with respect to emotion. Lyrics convey both acoustical information of sounds and semantic contents of words, and each may influence melodies differently, while linguistic sounds sometimes make us feel features of visual imagery such as sharpness or roundness of objects. This research explores the acoustical and semantic effects of lyrics on music impression. It examines whether the impression created by the lyrics of a song can be affected by its linguistic sounds, using the songs whose melodies are the same, but the languages of the lyrics are different. Thirteen versions of a popular theme song from a movie were compared. All female singers sang the song in their own native language (e.g., Japanese, English, Chinese). The songs were played back to 24 Japanese participants through loudspeakers. They were required to rate how they felt about the linguistic sound of the lyrics in the music in terms of each of nine adjective pairs, using the semantic differential method. Most were unable to understand any of the languages except English and Japanese. They did not evaluate the singer's ability. The results showed that the ratings about the lyrics were different among the languages. When a Japanese singer sang the song, the adjectives of "easy to image the scene" and "feeling calm" were rated much more highly. The results suggest that comprehension of the meaning of lyrics, rather than acoustic impression, is a more essential factor for imaging the scenes of songs.

The auditory environment: Indoor noise, satisfaction, and lifestyle choices

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Abstract

In the context of greater attention to consumer satisfaction and encouragement of lifestyle activities, the issue of indoor noise has emerged as a significant and under-reported issue in healthcare.

This paper reports on a series of studies looking at noise in both hospital and community contexts. Firstly, the effects of excess noise are considered within the emergency department environment at two different hospitals, with measurement studies confirming that in fact noise level do exceed current standards. Trials of the use of music to reduce stress and improve patient satisfaction are outlined in the context of two different hospitals, with pilot data based on the PANAS suggesting a trend towards reducing stress for the patients involved.

The effect of excess indoor noise on lifestyle choices of community-dwelling residents is also explored, based on a mixed method study of 50 independent residents. Results indicated that older adults are highly sensitive to indoor noise, such as community shopping centres. In order to maintain an active lifestyle, older adults demonstrate a range of avoidance and

coping strategies. This may have flow-on effects on lifestyle activities such as having a coffee with friends and actively walking around the shopping mall.

Excess indoor noise is pervasive and needs to be better addressed in today's society. It is often ignored and invisible, yet it affects health and well being in both the hospital and community setting. Further attention is needed to improving awareness of the auditory environment, in order to improve positive choices for health and wellbeing.

Let's Improvise! A case study on upper limb stroke rehabilitation

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Abstract

"Functional Electrical Stimulation (FES) and ThumbJam" is a novel intervention combining an FES protocol with an iPad application, successfully implemented in upper limb stroke rehabilitation. A 74-year old female retired pianist and Professor of Music was admitted to Hospital following a left pontine stroke. On assessment she was unable to use her right upper limb functionally. Conventional occupational therapy commenced consisting of mirror therapy, active ROM/PROM, ADL functional retraining and FES to the wrist and finger extensors. At Week 4 of admission, the RMT and Occupational Therapist collaborated to commence a trial of forearm FES in combination with the music making application, "ThumbJam", on the iPad. Within 3 weeks, the patient as able to use ThumbJam without the FES, progressed to the keyboard in 4 weeks and has now commenced independent scales on the piano at home (21 weeks) as well as successful use of the arm in ADLs. The patient also reflected feeling more motivated to engage in rehabilitation when using the iPad based instrument. This case study will review the evidence with regards to FES and music therapy interventions, outline the treatment protocol used and make recommendations for future use of "FES and ThumbJam" in upper limb stroke rehabilitation.

Moving to the Music: a pilot physiotherapy/music therapy exercise group

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Abstract

Background

Music Therapy seems to be an underutilized option for stroke rehabilitation in Australia. There is evidenced research highlighting the specific place and need of Neurologic Music Therapy (NMT) techniques in stroke rehabilitation. Collaborative approaches of music therapists and other allied health professions have the potential for specialised treating and increased patient access to rehabilitation.

Aims

This Moving to the Music group sought to investigate the effect of combining music

therapy/NMT and physiotherapy interventions through group exercise. This approach was based on the premise that using music in movement changes the temporal aspects of the functional activities of sit-to-stand and walking.

Method

Referrals to the group were screened by the Stroke and Neurological Co-ordinator to ensure that patients were appropriately grouped together based on their functional abilities. The patients attended weekly 45 minute sessions conducted by a physiotherapist and neurologic music therapist. Assessments including the 10-metre walk test (10MWT) and the 5 sit-to-stand test (5STS) were taken pre- and post session, along with a questionnaire for patient feedback.

Results

There was a minimal clinically importance difference (Meretta et. Al, 2006) identified with the 5STS test post session; the preliminary data identified an average improvement by 5.83 seconds in the post test. The questionnaire indicated that patients are more engaged in the therapy session and report an increased awareness of body movement and position post session.

Discussion

This collaborative approach to rehabilitation regime of inpatients has the potential to reach more patients and further their rehabilitation and motivation for recovery.

An investigation of empathy among fans and non-fans of violent music

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Abstract

Exposure to violent video games is linked to negative outcomes such as reduced empathy for the plight of others. No research has investigated whether exposure to violent music has similar effects. The present study investigated whether violent music fans show reduced empathic reactions to aggression when compared to non-fans. 108 participants self-identified as fans of violent heavy/death metal, classical or jazz music ($n=36$ per group). Participants were randomly presented with six vignettes that described a primary character's reaction (the "aggressor") to a secondary character's irritating action (the "instigator"). The aggressor's reaction was non-aggressive, mildly aggressive or strongly aggressive. After reading each vignette, participants rated empathic concern (other-oriented empathy) and personal distress (self-oriented concern) in response to the aggressor's reaction. Participants also completed measures of trait empathic concern and personal distress, and a music function questionnaire. It was hypothesised that compared to violent music non-fans, fans would report lower trait empathy and reduced short-term empathic concern and personal distress in response to the aggressive reactions. Indeed, fans of violent music reported significantly lower trait empathy compared to classical and

jazz music fans. However, short-term empathic concern and personal distress in response to the aggressive reactions did not significantly differ between fan groups. Finally, fans of violent music reported that it plays a significantly greater role in social bonding than does classical music for classical fans. Results will be discussed in light of cognitive and behavioural consequences of desensitisation to media violence and pre-existing individual differences between fans of different musical genres.

The effect of handedness on motor-space-pitch associations in pianists


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Abstract

Aims

This study investigated the effect of handedness on pianists' abilities to adjust their performance skills to new spatial and motor keyboard mappings. To this end, we studied whether left handed pianists are better in learning a new mapping of well-learned motor-space-pitch associations than right handed pianists using a transfer of learning task.

Methods

Twenty-five left- and right-handed pianists participated in the experiment. They practiced and played simple melodies on a regular and a reversed MIDI piano keyboard. First, pianists practiced simple melodies for 10 times and then performed these for 4 times in 4 test conditions with a change in: spatial mapping of the keyboard (normal or reversed keyboard) and contour (the same or reversed melodic contour causing a change of fingering). The duration of a melody as well as the amount of errors played were analysed.

Results

It was found that left-handed pianists tended to be quicker and more accurate in playing melodies when they played the melody with reversed contours. Interestingly, there was no difference between the two pianist groups with regard to their ability to adapt to a new special mapping using the reversed keyboard.

Discussion

In summary, the results suggest that handedness may influence pianists' skill to adjust to a new motor mapping. Future research could focus on transfer of learning differences between professional and novice pianists.

Theories of Affect and Musical Listening in the Late Middle Ages

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Abstract

This paper asks how might theories of musical affect contribute to a historicised understanding of listening for the music of the late middle ages. After reviewing selected statements on the ethical nature of modes, whose attributed effects are sometimes contradictory and arise from several cultural contexts, I examine how the concept of pleasure, which appears in the writings of several late medieval writers on music, might inform our understanding of polyphonic listening in this period. The pleasure of hearing consonances, and their heightened anticipation created by lesser consonances or even dissonances in counterpoint, can be understood within the framework of evolving discourses around subjectivity and human experience. I take the opportunity to compare these medieval models of listening to more recent ones, particularly those articulated in the writings of David Huron. Late medieval Padua, as a seat of early humanist discourse will be the focus of the final part of my paper. In particular, I will summarise the place of Johannes Ciconia's writings about music and his musical compositions in the framework of early humanist discourse at Padua. In doing so, my intention is to situate Ciconia at the head of paradigm shift of musical affect from ethos to pathos.

"It's just a song: it's meant to be fun!" Overcoming the fear of singing through socio-altruistic music-making

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Abstract

This paper reports on an approach to music making that prioritises social-altruistic sharing over skill development as a means of promoting anxiety-free singing. The research methodology used to explore this approach is a form of qualitative Educational Design Research which focusses on interrogating practical interventions in real-life settings that have a sound theoretical basis. The theoretical basis of the approach includes two concepts developed over a decade within the city-wide practice-based program. The first, Selective Mutism for Singing, conceptualises wide-spread anxiety around singing as a social construct that inhibits the natural inclination to participate. The second, the Music Outreach Principal, offers a solution to this problem through social music making with an altruistic purpose. The aim of the individual's singing is to help others through the facilitation of joint singing, thus sharing benefits that might flow from active, rather than passive, engagement. The theoretical concepts were explored through three different groups within the educational and community sectors: a group of teachers new to the concepts; an experienced group of teachers who had worked with the concepts for some years; and a specific case study of a leader of a community singing group. Findings suggest that the concepts could be useful in

helping reduce anxiety related to singing for those tasked with musical leadership in the educational or community sectors. Further research focussing on the EDR concepts of transportability and up-scaling are also discussed.

"Equally in Wickedness They Strive": Interval Choice and Use of Melismas as a Means of Conveying Emotion in Two-Part Conductus

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Abstract

The texts of the conductus found in the Florence Manuscript abound with imagery born of and inspiring strong emotions.¹ The repertory contains songs of moral outrage, songs of Marian adoration, and grief-stricken laments, among other textual themes. The conductus repertory was created and flourished primarily between 1170 and 1220, and contains a number of stylistic subgroups. Works from two of these subgroups will be examined: neume-against-neume² conductus without melismas, and neume-against-neume conductus with melismas of modest length. The increasing use of the interval of the third to highlight words of significance between 1170 and the end of the twelfth century will be examined in order to determine the way these textual emphases convey emotion. In the group of conductus with modest melismas, the relationship between melismatic text setting and textual meaning will also be examined. These investigations will reveal ways in which the anonymous composers of these conductus approached the task of setting highly-charged emotive texts to music, and whether texts of the same kind (laments, for example) used significant intervals and melismas in a consistent way across these subgroups of the repertory.

¹ These texts were translated into English in their entirety by the Australian musicologist Gordon Athol Anderson in the late 1970s and early 1980s.

² My designation of "neume-against-neume" text setting also includes in this repertory note-against-note and note-against-neume settings. Many conductus use combinations of these settings.

Poster Session Abstracts
(in alphabetical order according to the first author)

Improvising a way forward: Performance, collaboration and the psychology of making things happens

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Abstract

How might the processes of performance and composition in improvisatory settings help musicians develop a psychology of coping with the uncertainty that accompanies our musical lives? In this paper, we report on the first phase of an improvisation-based musical collaboration which is both creative work in its own right, and dialogue with existing literature in practice-led research and the psychology of career development. Improvisation offers an environment of considerable agency for us as performers and producers. As we reflect upon and discuss our collaboration it has also provided us with an avenue for understanding learning beyond the music-making sphere. In the work of comedian, Tina Fey, researchers MacDonald and Wilson, broader theories of expertise developed by Dreyfus and Benner, and Krumboltz's happenstance learning theory, we observe similarities between approaches to improvisation in music and to improvisation in life. In exploring and analyzing the effectiveness of our work together as improvisors, we have also noted the affect generated by this process as we re-engage with our creative work post-PhD. As we dance between 'charting the course' and 'riding the wave' we have wondered how the cumulative learning that takes place through our creative work may be better understood and harnessed as a tool for both investigation and for navigating professional life. Using our collaboration as a case study, we propose a framework for professional/career learning that mirrors our musical improvisations, and may provide a hopeful metaphor for other creative workers looking for artistic models of professional agency.

Developing a holistic approach to singing practice, using principles of hatha yoga

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Abstract

Background:

The health of the body and mind are important considerations for maintaining a healthy, functioning singing voice. Hatha yoga has been identified as a holistic practice tool that addresses the body, mind and voice of the singer, no studies exploring the experience of singers participating in a purpose designed yoga for singers (YFS) class have been documented. My research aims to understand the experience of singers participating in such a class, and by doing so, inform future approaches to vocal pedagogy.

Methods:

This study used an action research methodology to design, implement and refine a YFS program, delivered as a one hour class per week in three, six-week iterations. Eleven participants aged between 18 and 65, living in Brisbane, Australia, who identified as amateur or professional singers were recruited. Course outcomes were informed by semi-structured interviews and reflective journals. Filmed pre and post intervention performances, were rated by a panel of five professional singing teachers.

Results:

At the time of writing, ongoing qualitative analysis is exploring the emergent themes of delivery, community, wellbeing and learning. Findings indicate that participants found practising with other singers created a sense of community and support, fostering peer learning. Elements of transformative learning are also emerging as participants report on how they applied their learning in practice, rehearsal, performance, teaching, and everyday life.

Discussion:

By exploring new and novel ways to address the body, mind and voice, educators can equip singers with tools that can be used in practice, performance and everyday life.

Choral singers' preferences for expressive priming techniques

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Abstract

Preparing an emotionally expressive musical performance is a process lasting several months which includes distinct phases of familiarisation, experimentation, and revision, and addresses both the technical and interpretational demands of the repertoire. Much of the current research on teaching expressivity involves solo instrumentalists, this study focuses on choral singers. The study explores the preferred priming techniques of individual singers based on researched and typical methods for teaching expressivity and the relationship, if any, between their self-reported level of expressivity and preference for a particular priming technique. 112 self-identified choral singers participated in this study and answered questions based on their preferred method of expressive priming technique (vocal modelling, using metaphor, tapping into felt emotions, and drawing on past life experiences) in three conditions (active, passive, and instructor). The most preferred priming technique in a passive and in an instructor role was vocal modelling, with use of metaphor and tapping into felt emotions favoured in an active role. Four one-way between-subjects ANOVA were conducted to compare the mean differences for preferred techniques for priming emotional expressivity based on level of experience, and revealed preference for drawing on past experience was significantly higher among more experienced singers. Methods for priming expressivity are typically used in conjunction with one another but, to the knowledge of the author, none have shown a link between level of experience, or age,

and one method. Preferences for a particular technique in different scenarios highlights the need for conductors to adapt and retool their pedagogy.

I am becoming my own song: Abjection and identity in Milton Babbitt's 1964 cantata, "Philomel"

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Abstract

The tragic, violent, and bloody story of Philomela in book VI of Ovid's *Metamorphoses* intersects ideas of voice and silencing with identity, as her human voice, silenced through violence, transforms into the voice of her loom and then into birdsong. Over the centuries, the cultural trope of Philomela has been appropriated and adapted by writers, artists, and musicians, with her human identity becoming eclipsed by her avian counter-part, the nightingale. Yet, despite her enduring presence in music, Ovid's Philomela remains a neglected topic in musicology, particularly in the twentieth and twenty-first centuries. In this paper, I consider Milton Babbitt's 1964 cantata, *Philomel*, in the context of Julia Kristeva's theory of the abject, which is well-suited to investigate the function of an evolving speaking subject like Philomela. The plurality of Philomela's voice is perfectly captured in *Philomel*, since live voice, pre-recorded voice, and electronics are integrated to convey her voice from the point of her metamorphosis. John Hollander's purpose-written text, inspired by Ovid, itself experiments with sound, text, and voice, with linguistic puns emphasised through Babbitt's synthesised score. Philomela's fragmented identity enters into broken discourse with her former, human, self, while the voice of her loom is replicated in the serialist combinations that weave together the performer's voice with electronic tape. I will examine Philomela's abjection as her identity separates from itself—through the act of metamorphosis and the memory of the violence inflicted upon her voice—in her transition from an objectified body to a speaking/singing subject.

Can exploration of the underlying processes of music and singing inform approaches to music making in community mental health contexts?

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Abstract

'Blue Sky Highway' (BSH) is a multidisciplinary collaboration between mental health and music professionals that develops opportunities for singing, music and performance projects with people who have lived experience of mental health challenges. This paper will describe the development of the project, the distinctive approach taken to community music making, and the design of the pilot community engagement. The project is motivated by the thesis that music and singing provide a metaphor for personal agency that can be creatively explored in the process of mental health recovery. In practice the BSH team propose that

professional musicians may offer mental health consumers a deep and satisfying engagement with musical materials, provided sensitive community processes frame the engagement. In the recent pilot workshop series 12 participants explored personal stories embedded in much loved songs. All participants had experienced some barriers to self-expression through music and singing including lack of skill, fear of judgment and limited access to opportunities. Participants experienced dependable, sensitive accompaniment and were empowered to make their own decisions about the arrangement of musical materials in a liberating and empowering process. With the guidance of an experienced mental community worker the pilot was successful in its aim to balance personal risk for participants with opportunities for growth through challenge. The BSH team see potential in supporting individuals to dig beneath the surface of music, opening new dialogues and initiating new collaborations, reappraising negative self-talk and building confidence in the deployment of the tools of communication embedded in music and singing.

Embodying Complexity: Singers' Experiences in Choral Aleatorism

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Abstract

Following the European transformation of Cagean indeterminacy into 'aleatorism' (Feisst 2002), improvisatory textures made increasing appearances in choral composition. Choral aleatorism was sometimes employed to balance textural complexity and idiomatic vocal writing (Bodman 1994), against the backdrop of choral music's general conservatism (Strimple 2002); or, as Pauline Oliveros suggests, to afford a uniquely embodied and liberatory performance experience (2004). The primacy of the performer – whether through entrainment or agency – predicates both rationales to an arguably greater extent than it does in much instrumental aleatorism.

Little has been written about these performers' experiences, however. Musicology's 'performative turn' (Cook 2001) focused on instrumental performance, and, with few notable exceptions (e.g. Bayley 2013), on non-aleatory music. Based on findings from case studies with four choirs, I argue that singers' participation in aleatory or indeterminate choral music entails acts of embodied construction. This paper will detail these case studies and the preliminary conclusions yielded by Grounded Theory Method data analysis, alongside analysis of singers' interpretations (Hellaby 2009). Adapting Davis and Sumara's (2002, 2006) argument that complexity thinking not only reconciles the disparity between the social and personal strands of constructivism (e.g. Vygotsky and Piaget), but also addresses constructivism's inability to propose action or method, I contend that singers' complex experiences might yield an emergent performance practice. Through internal heuristics and external influences, they devise processes that negate the Cartesian mind-body divide and contribute to a collective (re)construction of improvisatory music that exploits the physical and affective dimensions of choral singing.

Understanding music listeners' favourite formats

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Abstract

Music listening options now abound, involving listening devices, technologies, selection behaviours, and playback features, among others. The present study considered music listening in terms of the format, or device, involved. By adopting a uses and gratifications approach, this study aimed to examine preference for six popular formats: radio; live music; physical (e.g., CD, vinyl, cassette); digital file (e.g., mp3, iTunes); paid-for streaming; and free streaming. Research questions addressed people's nominated favourite formats and the reasons people provided for their preference. Three hundred and ninety-six participants (aged 16-71 years, Mage = 34.53; 71.00% female) completed an online survey, which included measures of music engagement, format use, and demographics. The results show an emphasis on music listeners preferring live music and digital files, and there were no statistically significant age or gender differences in format preference. Using a Uses and Gratifications approach, qualitative analysis of open-ended responses demonstrated that preferred formats satisfy different needs and wants. For example, live performances were distinct in promoting social bonding and emotional experiences; and clear advantages concerning cost, access, and discovery were pertinent to both free and paid-for streaming. Much is known of why people listen to music, but not how people listen to music. By focusing on preferred music format, this study shows that listeners make conscious decisions to choose one format over another lending to the unique needs which they are able to serve. Such findings draw attention to the wide-reaching impact of the digital revolution on how we now consume and enjoy music.

Brain activities during listening to ambiguous melodies revealed in fMRI

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Abstract

Melody recognition involves not only passive processes such as interval and duration analysis but also active and creative processes to form meaningful phrases or to compare with phrases in the memory. In order to investigate the latter, more active part of melody recognition, we proposed to use ambiguous melodies using a kind of illusion caused by a continuous tone (A4 for example) and an intermittently repeated tone (C5, 0.25s in duration, with 0.25 s rests between). One often hears the illusory melody C5-A4-C5-A4-, etc. instead of the repeated C5 with the background of A4. If two continuous tones A4 and C5 are presented simultaneously, there arises the ambiguity between the Up (C5-E5..) and Down (C5-A4..) phrases. In the fMRI experiments, we induced the listeners to hear either Up or Down phrases by presenting either one of them without the continuous tones and then the ambiguous stimulus followed. We used repeated C5 tones (without rests) for a

control stimulus (Neutral). The listeners were asked to press a button when he/she noticed that the presented phrase changed to the other one. Then, the immediately preceding recording was discarded. So far we have measured 10 subjects, and the result of the group analysis showed that in the contrasts of Down>Neutral and Up>Neutral, the prefrontal cortex including the orbitofrontal cortex showed increased activities. This area is known to be related to emotion connected with reward-punishment, and motivation. We estimate that reward-driven motivation is necessary for active melody recognition.

Live versus recorded music: Pain, anxiety, immune function and salivary biomarkers

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Abstract

There is broad empirical evidence for health benefits from music, but is it better to listen to live music or recorded music for positive health outcomes? This explorative study sought answers with the emerging science of saliva analysis, which examines biomarkers that indicate stress and immune function. In this case salivary cortisol, alpha-amylase, immunoglobulin-A, interleukin-1beta, and pH were measured. Saliva samples from 50 university students and 23 palliative care and surgical patients were compared before and after each participant listened to either live, audiovisual or audio recorded classical music, or live or audio story readings. Saliva's non-invasive, repeatable, objective psychobiological snapshots were supplemented with visual analogue scales for pain and anxiety, and self-report affect scales.

Results indicated that overall more positive health indicators arose from live music than recorded music, particularly in the clinical settings. Stories, used as a control for the music interventions, were also shown to have some moderating effects on pain and anxiety. This study demonstrates the therapeutic values of music as well as story readings, and the superior benefits of live music and stories compared to audio recordings of the same presentations. The psychoneuroendocrine methodology used had some limitations, particularly with the clinical population. Some differential results highlighted the value of using a kaleidoscope of outcome measures to gain a fuller understanding of the complex cognitive-emotional and biopsychosocial processes involved in music's beneficial effects.

Generating expressive body movements in contemporary solo flute performance

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Abstract

Little research has considered the expressive components of bodily movements in contemporary music performance. No prior research has examined the gestures in solo flute performance, even when contemporary repertoire features a growing number of composer-instructed body movements. Addressing this gap, the present research considers solo contemporary flute performance by investigating how flautists generate expressive body movements in performance. This research aims to (1) understand how professional flautists move their body when performing repertoire that uses either standard notation or extended techniques, and (2) how musical experience and personality of the individual flautist influences the choice of body movements. Laban Movement Analysis is applied to video data of 30 flute players to (1) produce a corpus of commonly used body movements, and (2) compare movements generated from performing music with standard notation or extended techniques. Preliminary results from a pilot study highlight more lower body movement when performing repertoire with standard notation and more upper body movement when performing repertoire with contemporary notation. It is possible that the greater upper-body physical requirement is needed to produce certain extended techniques present in contemporary flute repertoire. Future analyses of body movements will involve participants' own performance critiques and quantitative surveys of the participants' musical experience and personality. It is anticipated that these results will contribute new knowledge to the field of musical gesture, specifically regarding contemporary performance, and its outcomes could be applied by flautists to further inform their practice and enhance performer-audience communication.

Perceptions of in-tuneness after listening to music from different tuning systems

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Abstract

Numerous tuning systems have emerged across cultures and evolved throughout history. Natural tuning is one of the most consonant (smooth-sounding) tuning systems created, as it is based on the natural way that sound waves resonate. The frequency value of notes change depending on the tonal center, so some naturally tuned instruments can't modulate to different keys. The equal-tempered tuning system was designed to overcome this challenge by imposing an equal distance between each note; however, this meant that the frequency relationships became more complex than in natural tuning, so none of the intervals within the octave were actually in tune and consonant anymore. The present study aimed to explore whether people adapt their perceptions of in-tuneness after listening to

music from the equal-tempered or natural tuning paradigm. Participants were asked to adjust the frequency of notes within dominant seventh and tonic chords to where they felt they sounded most in-tune, and whether they perceived certain chords as in-tune. This task was completed before and after listening to either barbershop-quartet (naturally tuned) or Korean popular (equal-tempered tuned) music. It was hypothesized that participants would adjust the frequency of notes closer to the values of the tuning system they listened to and perceive chords from this tuning system as more in-tune after listening to music. The experiment is being conducted as part of a psychology honours thesis. Thus, the data is currently being collected and the results will be analyzed by the due date of 26th October 2017.

Distinctive melodic features predict recognition of whole melodies

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Abstract

Distinctiveness predicts the point of recognition of a melody (Bailes, 2010), and the recognition of unique tones (Vuvan et al., 2014), yet no studies have examined the role of distinctiveness in recognizing whole melodies. Musical events which are less predictable are perceived as distinctive, however, tonal expectancy is culturally specific, associated with schemata acquired through music-listening experiences (Vuvan et al., 2014; McLachlan et al., 2013; Stevens & Byron, 2009). Thus, we composed a set of novel melodies incorporating high and low expectancy musical events which should result in the melodies being perceived as more or less distinctive by Western listeners. Using computational analysis and human ratings by a group of 36 pilot testers, we established a final stimulus set of 96 novel melodies (48 eight-note, 48 sixteen-note), half of which were high and half low in distinctiveness. A separate group of 26 participants completed a recognition test. Participants heard half of the high and low distinctiveness melodies, then listened to the full stimulus set, and rated whether they had heard each melody in the previous task. Computational analysis revealed that greater pitch and interval range, wider intervals, varied contour, and ambiguous tonality within a Western diatonic framework predicted perceived distinctiveness. Linear mixed effects models showed distinctiveness significantly predicted recognition only for sixteen note melodies. Of those features associated with perceived distinctiveness, only wider intervals predicted both correct recognition and correct rejection. Thus, the distinctiveness effect as observed across domains (e.g., faces, words) generalizes to the recognition of longer, whole melodies.

Everyday musical and visual experiences: Experience sampling with the MuPsych app

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Abstract

Pleasurable experiences of music are prevalent in everyday life, and it is important to understand the causes and emotional outcomes of such experiences. The current study aimed to investigate the nature of emotions induced by everyday pleasurable experiences of music, and identify the individual, musical and contextual variables that produce these emotions. Furthermore, it aimed to directly compare these experiences of music to those of everyday visual environments. To achieve this, the study utilised MuPsych, a mobile experience sampling app designed for the real-time collection of ecologically valid data. This method allows for the assessment of responses to music through event-based sampling of listening episodes, and responses to visual environments through random sampling. These modalities are compared across a range of variables, including changes in affective state, context, regulation strategies, and aesthetic qualities. Data collection is ongoing, and results will be presented at the conference. It is expected that these results will provide insight into how music brings pleasure into our everyday lives, and how this compares to pleasure induced through visual stimuli. The development of such an understanding will have applications in areas such as music streaming curation and augmented reality.

Music medicine and music therapy: Addressing cardiac recovery and rehabilitation needs

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Abstract

Despite evidence of effectiveness, worldwide participation rates in cardiac rehabilitation are low. Music is an acceptable modality for engaging consumers in cardiac recovery and rehabilitation initiatives. Limited evidence exists about music therapy and psychosocial issues of cardiac recovery and rehabilitation. This paper explores both inpatient recovery and further rehabilitation in relation to both music medicine and music therapy programs aimed at improving psychosocial outcomes of patients around stress management after a cardiac event.

Information from two projects is presented within a continuum of cardiac care. A qualitative study applied the Bonny Method of Guided Imagery and Music to six patients from two major hospitals, after cardiac bypass surgery, exploring experiences and adaptation in the rehabilitation process. Emergent themes from narrative thematic and semiotic analysis included: 1) Looking through the frame, 2) Feeling the impact, 3) Spiralling into the unexpected, 4) Sublime plateau, and 5) Rehearsing new steps. Secondly, an inpatient program using music immediately after stenting procedures to assist with recovery is reported, accessing 40 patients. Results from both of these studies indicate that music

medicine and music therapy each have a role to play in effectively addressing psychosocial needs of cardiac patients, both immediately in their recovery from the stenting process and later on in their rehabilitation after a cardiac event, thereby providing data for larger hospital and community projects. It is concluded that music therapy may contribute to addressing psychosocial needs in recovery and increasing the worldwide currently low rates of participation in cardiac rehabilitation.

Stroke SURVIVORS who are stroke SURVIVING: using music to maintain upper limb function post discharge

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Abstract

Stroke has been identified to be the most important single cause of severely disabled people living in their own homes (Carr & Shepherd, 2011). Further to the stress placed upon the self and the family as a result of stroke, the costs of ensuring the access to ongoing rehabilitation and appropriate care places a financial burden.

Specifically looking at the approach to rehabilitation of the upper limb due to stroke, the main avenues are within “conventional treatment”, consisting of physiotherapy and occupational therapy. Therefore, this presentation aims to discuss the potential of music therapy for upper limb stroke rehabilitation. Drawing upon a case study that led to this research, this presentation will discuss the specifics of the intervention and appropriate measures of evaluation.

The intervention is based upon the combined use of functional electrical stimulation (FES) and therapeutic music making on an accessible iPad based instrument. This protocol consists of three phases; therapeutic improvisation, neurologic music therapy techniques and song learning. The task progression of each phase will be explained through the use of a decision tree. The theoretical underpinnings and place of each phase will be discussed in detail in regard to the functional outcomes and potential for carryover and continued independent rehabilitation post discharge. FES will also be explained in relation to its place in conventional therapy, and its enhanced impact with a music therapy intervention.

Finally, the accessibility and cost-effectiveness of iPad/tablet technology will be discussed in regard to its place in upper limb stroke rehabilitation.

A new approach to vocal timbre analysis demonstrated through Gotye's "Somebody that I used to know"

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Abstract

Vocal timbre is a highly salient musical feature, having the potential to impact a listener's emotional experience of a song. This paper is concerned with the relationship between emotionally charged vocal timbres and their impact on emotional perception of lyrics, particularly in the context of popular vocal songs (popular songs where the vocal line is foregrounded in the listening experience). Currently, analytical techniques for vocal timbre in popular vocal songs remain in their infancy. Consequently, in such songs vocal timbre is an under analysed area of musical expression.

In this paper, I propose a new analytical technique for vocal timbre based on the hypothesis that emotion expressed in vocal timbre impacts emotional perception of lyrics. This analytical technique takes the recording as the basis of analysis. It is a multistep process which allows the analyser to 1) conduct an in depth analysis of vocal timbre while also acknowledging the wider musical environment in which it is situated, 2) efficiently describe/discuss vocal timbre, and 3) assess the relationship between emotion expressed in vocal timbre and emotion expressed in lyrics.

An in depth analysis of Gotye's "Somebody that I used to know" will be presented to demonstrate the application of this technique. This analysis will show that analysing vocal timbre in terms of its emotional content, and its impact on emotional perception of lyrics, may be a fruitful avenue for further investigation.

Investigating the nature and nurture of singing ability using a twin study

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Abstract

Introduction: For centuries, many have been intrigued by the expression of musical abilities. The past decade has seen an increase in genetic studies investigating various music behaviours such as music perception abilities and music creativity. While some promising and converging genetic evidence have emerged, singing ability has received minimal research attention thus far, despite singing being a universal musical trait which emerges spontaneously in infancy even prior to formal music training.

Materials and Methods: A pilot twin study (N = 108 pairs) was conducted using a novel, purpose-built online program "Let's Hear Twins Sing!" with recording capability. Singing ability was both objectively assessed (in terms of pitch accuracy) by three different singing tasks and subjectively assessed by participants themselves. Environmental factors associated with singing ability were also investigated using a questionnaire.

Results: Genetic analyses showed that identical twin pairs were more similar than non-identical twin pairs in both objectively assessed and self-assessed singing ability, which suggests that genetic influences are more important than environmental influences in explaining the differences in singing ability within the twin sample. Interestingly, several environmental factors of singing ability also appear to be genetically influenced.

Conclusions: Pilot study findings provide preliminary evidence for the role of genes in influencing singing ability and some of the associated environmental factors. A larger twin sample is necessary to provide more robust estimations of genetic and environmental influences on singing ability. To this end, we are conducting a large online twin study (recruitment target: 1,500 twin pairs).

Investigating music-evoked autobiographical memories in people with dementia

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Abstract

Dementia is a neurocognitive disorder; it is a global problem due to its major prevalence and current lack of a cure. As the benefits of pharmacological treatments are limited, it appears appropriate to explore applications of music to treating people with dementia (PwDs). This paper provides an overview of this literature and proposes a theory involving using music to induce ‘memory chaining’, with the goal of improving wellbeing.

To date, there is evidence that when PwDs recall a life event after listening to music, autobiographical recall (El Haj, Postal, & Allain, 2012) and linguistic production (El Haj, Clément, Fasotti, & Allain, 2013) are improved. If music-evoked autobiographical memories (MEAMs) are activated, and these domains are enhanced, then memories that are not directly related to the MEAM may also be accessible through the ‘chaining’ of autobiographical memories (Mace, 2014). Access to memories may lead to increased reminiscence, which has psychosocial benefits for PwDs and their carers.

The current paper proposes that individual differences in PwDs nuance the presence and usefulness of music-driven memories, therefore requiring the heterogeneity of personalities, life experiences, and clinical diagnoses to be considered. Reminiscence may not be beneficial, or indeed suitable, for all PwDs, such as when the individual tends to ruminate (Garrido & Schubert, 2015). The paper proposes how to test which individual characteristics may mediate the construction of MEAMs – including age, gender, musician identity, and nostalgic and ruminative tendencies – and investigates the use of playlists including personally relevant- and researcher-chosen music. Through such research, the focusing of enquiry within music and dementia through theory-based and testable hypotheses is hoped to be achieved.

Perfectionism, academic emotions, and response to a music emotion regulation intervention in adolescents

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Abstract

This poster presents part of an intervention study in which adolescents experiencing high levels of academic emotions attended a group music emotion regulation program called Tuned In Academic. The study examines trait perfectionism in relation to academic emotions (pride, enjoyment, hope, anxiety, shame, hopelessness, boredom) and procrastination on academic tasks, and as a potential moderator of adolescents' responses to the Tuned In Academic program.