Cultural Value

Music, Empathy, and Cultural Understanding

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Arts & Humanities Research Council

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Executive Summary

In the age of the internet and with the dramatic proliferation of mobile listening technologies, music has unprecedented global distribution and embeddedness in people's lives. It is a source of intense experiences of both the most individual (personal stereos) and massively communal (large-scale live events, and global simulcasts) kind; and it increasingly brings together or exploits a huge range of cultures and histories, through developments in world music, sampling, the re-issue of historical recordings, and the explosion of informal and 'bedroom' music-making that circulates via YouTube. For many people, involvement with music can be among the most powerful and potentially transforming experiences in their lives. To what extent do these developments in music's mediated and mediating presence facilitate contact and understanding, or perhaps division and distrust, between people? This project has pursued the idea that music affords insights into other consciousnesses and subjectivities, and that in doing so may have important potential for cultural understanding. The project: 1) brings together and critically reviews a considerable body of research and scholarship, across disciplines ranging from the neuroscience and psychology of music to the sociology and anthropology of music, and cultural musicology, that has proposed or presented evidence for music's power to promote empathy and social/cultural understanding through powerful affective, cognitive and social factors, and to explore ways in which to connect and make sense of this disparate evidence (and counter-evidence); 2) reports the outcome of an empirical study that tests one aspect of those claims – demonstrating that 'passive' listening to the music of an unfamiliar culture can significantly change the cultural attitudes of listeners with high dispositional empathy.

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1. Introduction

Music is a source of intense experiences of both the most individual (personal stereos, headphone listening) and massively communal (large-scale live events, and global simulcasts) kind; and it increasingly brings together – or exploits – an exceptional range of cultures and histories, through developments in 'world music', sampling, historical recording and hybridization. At a time when musicology, the social and cultural study of music, have become far more circumspect about essentializing and romanticizing claims, it is still not uncommon to find claims being made for music as a 'universal language' that can overcome (or even transcend) cultural difference, break down barriers of ethnicity, age, social class, ability/disability, and physical and psychological wellbeing. There are widespread symptoms of this belief or claim, including the activities of the West-Eastern Divan Orchestra (founded by Edward Said and Daniel Barenboim, to bring together Israeli and Palestinian musicians);[1] and the appointment by UNICEF of classical musicians to act as 'goodwill ambassadors', bringing their music to people in deprived, war-torn, or disaster-hit parts of the world so as to offer emotional support, solidarity, and a kind of communion. An extract from the violinist Maxim Vengerov, who in 1997 was the first classical musician to be appointed a goodwill ambassador, reads: "1997, September: For Maxim Vengerov's first official undertaking with UNICEF, he organized a musical exchange with children from Opus 118 – a violin group from East Harlem, New York. The children of Opus 118, aged 6 to 13, came from three different elementary schools in this inner-city neighbourhood. This innovative programme has spurred a whole generation to learn 'violin culture'. Along with the youths, Mr. Vengerov not only played Bach but also southern blues and tunes such as 'Summertime' and 'We Shall Overcome'." And from the same webpage (http://www.unicef.org/people/people_47229.html), beneath a picture showing the violinist in jeans and T-shirt playing as he leads a line of children in the manner of a latter-day Pied Piper is the caption: "In the remote village of Baan Nong Mon Tha, children from the Karen hill tribe ethnic group follow Maxim Vengerov, in a human chain, to a school run by a UNICEF-assisted NGO. Thailand, 2000." Similarly, the 1985 Live Aid, and 2005 Live 8, events were global pop music events intended not only to raise money (in the case of Live Aid) and popular pressure on politicians (in the case of Live 8) for the relief of famine and poverty, but also to galvanize a global consciousness and a united 'voice': as Bob Geldof, the prime mover of Live 8 put it: "These concerts are the start point for The Long Walk To Justice, the one way we can all make our voices heard in unison." And finally, the popular UK television series 'The Choir' (which has run to six series so far) documents the powerful 'identity work' and intense emotional experiences that accompany the formation of choirs in schools, workplaces, and military establishments out of groups of people who have had little or no previous formal musical experience, and who come from very varied walks of life (from bank executives to fire officers and military wives).

In all these very public examples of a much wider if less visible phenomenon, we see a complex mixture of implicit musical values, discourses about music's 'powers', folk psychology and its sociological equivalent, and (in some cases) more or less grounded or unsupported claims about the impact of music on the brain (cf. Tame, 1984; Levitin,

2006). It would be easy to be hastily dismissive of some of these claims, but a considerable volume of research by highly-regarded scientists and scholars, coming from disciplines that range from neuroscience and philosophy through psychology and sociology to anthropology and cultural studies has also made a significant case for the capacity of music and musicking (Small, 1998) to effect personal and social change (e.g. Becker 2004; DeNora 2013; Gabrielsson 2011; Herbert 2011). If music can effect change, and speak across barriers, it can also offer a means of intercultural understanding and identity work. As Cook (1998: 129) puts it:

> "If both music and musicology are ways of creating meaning rather than just of representing it, then we can see music as a means of gaining insight into the cultural or historical other … If music can communicate across gender differences, it can do so across other barriers as well. One example is music therapy… But the most obvious example is the way we listen to the music of other cultures (or, perhaps even more significantly, the music of subcultures within our own broader culture). We do this not just for the good sounds, though there is that, but in order to gain some insight into those (sub)cultures. … And if we use music as a means of insight into other cultures, then equally we can see it as a means of negotiating cultural identity."

In different ways, these (and other) claims seem to make use of a generalized notion of empathy. Empathy has recently seemed to gain considerable attention/currency in musicology, psychology of music, sociology of music and ethnomusicology as a way to conceptualize a whole range of affiliative, identity-forming, and 'self-fashioning' capacities in relation to music. But what is brought together or meant by the term 'empathy', and is it a useful and coherent way to think about music in relation to its individual and social effects?

Our project, and this report, arise from the disparate nature of the evidence for the claims about music's transformative power, individually and socially, and the 'scattering' of the case across theories and findings in a huge disciplinary range: from research on music and mirror neurons (Overy and Molnar-Szakacs 2009) to the ethnomusicology of affect (Stokes 2010), the history of musical subjectivity (Butt 2010) and sociological studies of music and collective action (Eyerman and Jamieson 1998), the case has been made for different perspectives on music's capacity to afford compassionate and empathetic insight and affiliation, and its consequent power to change social behaviour. These diverse research strands all point to the crucial role that musicking plays in people's lives, to its transformational capacity, and to the insights that it can afford. There is no single window onto 'what it is like to be human', but musicking seems to offer as rich, diverse, and globally distributed a perspective as any – and one that engages people in a vast array of experiences located along dimensions of public and private, solitary and social, frenzied and reflective, technological and bodily, conceptual and immediate, calculated and improvised, instantaneous and timeless. The fact that music can be heard and experienced by large numbers of people simultaneously and in synchrony (orchestral concerts, stadium gigs, live simulcasts) means that the embodied experience of music can also be shared – fostering entrainment and a sense of co-subjectivity. Indeed, some theories of the evolutionary significance of music highlight the

importance of music's empathy-promoting aspects, suggesting that a fundamental adaptive characteristic of music is its capacity to promote group cohesion and affiliation (Cross & Morley, 2008).

While a whole range of studies has suggested that empathic interaction with other human beings is facilitated by musical engagement, the direct empirical evidence for this important possibility is scattered and disciplinarily disconnected. The aim of the project summarised in this report was to examine critically a substantial body of research evidence that relates to claims for music's capacity to engender cultural understanding, primarily through the mediating construct of empathy; examine its consequences and significance, and provide a framework within which to connect its disparate elements and highlight points of interdisciplinary convergence and divergence; and carry out a focused empirical study that was designed to investigate a specific aspect of that complex case. The report follows the general disciplinary outlines of the initial literature search, which revealed in excess of 300 items relating to the broad theme ('Music, Empathy and Cultural Understanding') of the project.

2. Empathy

The word empathy has had currency in English for little more than 100 years, listed by the Oxford English Dictionary as being first used by the psychologist Edward Titchener in 1909, and defined by the OED as:

> "a. *Psychol.* and *Aesthetics.* The quality or power of projecting one's personality into or mentally identifying oneself with an object of contemplation, and so fully understanding or appreciating it.
>
> b. orig. *Psychol.* The ability to understand and appreciate another person's feelings, experience, etc."

Titchener's 'empathy' was his attempt to translate the term *Einfühlung* coined by the philosopher Robert Vischer (1873) in a book on visual aesthetics. But it was Theodor Lipps (1903) who really championed the concept of empathy, developing it from an essentially aesthetic category (the ability to 'feel into' an artwork) into a much more general psychological/philosophical concept to account for the human capacity to recognize one another as having minds. Laurence (2007) gives an important account of the origin and development of the idea of empathy, tracing a line back to Adam Smith's (1759) *The Theory of Moral Sentiments*, and Smith's appeal to a notion of sympathy and 'fellow feeling' as the basis for understanding and living a moral life that is based on imagining how we would feel in the circumstances of others. The distinction between *imagining* how we would feel and simply *identifying* with how another feels is crucial, since it places Smith's notion of sympathy in the domain of imaginative reason rather than blind contagion, and makes clear the role of cultural artefacts (paintings, literature, drama, music) as a means of socially learning that sympathetic attitude. Laurence also draws significantly on the work of Edith Stein (1917) – a doctoral student of Edmund Husserl – whose *On the Problem of Empathy* also engages with the problem of how it is that we can know or experience the mental states of others, whether this knowledge or

experience is given in some direct and primordial sense, and Stein's conclusion that empathy is dependent on the mediating role of similarity with the person (or even animal) with whom/which we attempt to empathize. Laurence ends up with definition of empathy that emphasizes empathy as both a process, and as a social and educable achievement:

> "In empathizing, we, while retaining fully the sense of our own distinct consciousness, enter actively and imaginatively into others' inner states to understand how they experience their world and how they are feeling, reaching out to what we perceive as similar while accepting difference, and experiencing upon reflection our own resulting feelings, appropriate to our own situation as empathic observer, which may be virtually the same feelings or different but sympathetic to theirs, within a context in which we care to respect and acknowledge their human dignity and our shared humanity." (Laurence 2007: 24)

Finally, and in significant contrast to Laurence, Baron-Cohen (2011) provides a wide-ranging account of empathy that explicitly presents it as a psychometrically measurable trait,[2] with a genetic and environmental basis, distributed in a particular network of brain regions, and manifested in seven 'degrees' – ranging from the zero degrees of empathy of the psychopath or autistic person,[3] to the six degrees of empathy of some 'hyper-empathic' individuals.[4] Baron-Cohen regards empathy as critically valuable human resource, and sees the erosion or loss of empathy as an issue of global importance that has the most serious consequences for social health at scales ranging from the family to international relations.

As this necessarily brief review has revealed, there is a significant range of perspectives on empathy, from which two in particular might be drawn. The first is the distinction between empathy as a skill or social achievement – acquired, educable, and in some sense fundamentally collective; and empathy as a trait – relatively fixed, individual, and with a genetic component. The second concerns the extent to which different perspectives emphasize the involuntary and inter-subjective character of empathy (sometimes expressed through the metaphor of contagion), involving identification with the other and a loss of self; as opposed to a more cognitive and deliberate view in which empathy depends upon an imaginative projection into the circumstances of the other (closer to what Smith called sympathy). These differences in perspective affect the scope and reach of the term empathy, and are an issue to which we return towards the end of this report in the specific context of music.

3. Music and Empathy across Different Fields

This section critically reviews the existing literature on music and empathy under a number of different conceptual and disciplinary headings.

3.1 Neuroscience

An increasing body of neuroscientific evidence indicates the very close coupling of perceptual and motor functions in the central nervous system, strongly suggesting that

one way to account for the human capacity to adopt the perspective of another (sometimes referred to as 'theory of mind' or even 'mind reading') is on the basis of the way in which a person's experience of their own actions is entangled with their perception of the actions of others. At the level of brain anatomy, it has long been recognized that there are suggestive parallels between the organization of sensory and motor cortices of the human brain and this might provide at least superficial evidence for the close relationship between perception and action. More recently, however, and particularly in the wake of the discovery of mirror neurons in the early 1990s (e.g. Di Pellegrino, Fadiga, Fogassi, Gallese, and Rizzolatti G., 1992), there has been a surge of interest in the ways in which perception-action relationships at the level of the central nervous system might provide a powerful way to explain a variety of intersubjective and empathic phenomena. Freedberg and Gallese (2007: 197) have argued that the activation of a variety of embodied neural mechanisms underlie a range of aesthetic responses, proposing that "a crucial element of esthetic response consists of the activation of embodied mechanisms encompassing the simulation of actions, emotions and corporeal sensation, and that these mechanisms are universal." Freedberg and Gallese are primarily concerned with the embodied and empathic qualities of visual art, but Overy and co-authors (Molnar-Szakacs & Overy 2006; Overy & Molnar-Szakacs 2009; McGuiness & Overy 2011) have developed a persuasive model of how the embodied, emotive and empathic effects of music might be understood from a mirror neuron perspective.

In simple terms, mirror neurons (or mirror systems as they are often called) are neurons in a motor area of the brain that become active when an individual[5] merely *observes*[6] an action of the kind that these neurons are usually responsible for controlling. These '*as if* body loops', as Damasio (1999) has called them, provide a direct identification with the actions of another, and constitute the fundamental building blocks of what Gallese (2001; 2003) has termed the 'shared manifold'. The shared manifold is understood as a three-leveled mechanism for inter-subjective identification: i) a phenomenological level that is responsible for our sense of similarity with others – which Gallese equates with an expanded notion of empathy; ii) a functional level characterized by models of self-other interaction; and iii) a subpersonal level, instantiated by the activity of mirror matching neural circuits (Mirror Neuron Systems). The aim of the shared manifold hypothesis is to ground a sense of empathy and self-other identity without suggesting that human experience and neuroscience can simply be collapsed into one another: hence the distinction between phenomenological, functional and subpersonal levels. Gallese is also at pains to point out that self-other identity is not all that there is to inter-subjectivity: mirror systems do not allow us to experience others exactly as we experience ourselves, since to do so would (ironically) preclude the possibility of experiencing others as such at all. Our capacity to experience an external reality with content and behaviours that we can understand is made possible by "the presence of other subjects that are intelligible, while preserving their alterity character." (Gallese 2003: 177)

At times the mirror neuron idea has been presented as if it were a hardwired feature of the brain that acted rather like a magic bullet. But as Heyes (2010) has argued, while one way to see mirror neurons is as an evolutionary adaptation (and therefore present at the species level), an alternative is to see the development of mirror systems as

acquired through the operation of associative processes through the lifetime of individuals. From this perspective, mirror processes originate in sensorimotor experience, much of which is obtained through interaction with others. Thus, the mirror neuron system is a *product* of social interaction, as well as a process that enables and sustains social interaction. One rather specific example of this kind of plasticity is the finding by Bangert et al. (2006) that trained pianists listening to the sound of piano music showed significantly more neural activity in the motor areas of their brains than did a matched group of non-musicians.

3.2 Perception-action coupling, Empathy and Embodiment

Mirror systems are one way to understand inter-subjective interaction and identity, with direct relevance to music, at a neural level. At the behavioural level there is another extensive literature that has revealed the significance of mimicry and synchronization in mediating human relationships in general, and music in particular. In a review of the extensive literature Chartrand and Dalton (2008; see also Chartrand & Bargh 1999) make the case for the importance of mimicry in social life, ranging from postural and facial to vocal and syntactic mimicry (people unconsciously mimicking one another's accents and sentence structures) as both manifestations of existing social bonds and affiliations as well as the means by which such social bonds may be established (e.g. Inzlicht, Gutsell & Legault, 2012). As Heyes (2011) has argued such imitative behaviours may be automatic and insuppressible, and constitute a fundamental embodied basis for a critically important domain of human social interaction. At a similarly general level, a number of authors (e.g. Valdesolo and DeSteno 2011) have demonstrated the power of synchronization in inducing altruistic and compassionate behaviours, this synchronization in many cases serving to entrain people's behaviours upon one another.

With this general psychological literature in mind, it is easy to see that music powerfully affords these kinds of cooperative and affiliative engagements. Music has long been associated with socially coordinated work, worship and celebration, where its rhythmically entraining attributes and opportunities for controlled mimicry and complementation (such as in the 'call and response' character of many vernacular musical cultures) play a central role (e.g. Clayton, Sager and Will 2005). Hove and Risen (2009) demonstrated with a tapping task that the degree of synchrony between individuals tapping together predicted how affiliated those individuals rated one another, and in a more directly musical context both Kirschner and Tomasello (2009) and Rabinowitch, Cross & Burnard (2012) have shown that over both shorter and longer timescales children involved in rhythmically synchronized music activities subsequently behaved more cooperatively and empathically than did children who were involved in an equivalent but not synchronized activity. Music is a powerfully multi-sensory, and particularly kinaesthetic (see Stuart 2012) phenomenon whose embodied character draws people into fluid and powerful social groups at a range of scales and degrees of (im)permanence, and in doing so helps to enact a kind of empathy.

3.3 Dispositional empathy and music

As discussed above, some authors (e.g. Baron-Cohen 2011) have understood empathy as a trait, arguing that since some people have a tendency to experience empathy more readily than others, being more or less empathic can be understood as a personality trait or a disposition. In its broadest sense, dispositional empathy can be defined as an individual's general responsiveness to the observed experiences of others, involving both perspective-taking capabilities or tendencies, and emotional reactivity (e.g., Davis, 1980). Davis (1980) has suggested that dispositional empathy is a multidimensional construct comprising at least four components: *Perspective-taking, Fantasy, Empathic Concern*, and *Personal Distress*. *Perspective-taking* can be understood as the ability as well as the tendency to shift perspectives (i.e., to see and understand things from another's point of view), while *Fantasy* can be described as the tendency to identify oneself with fictional characters in books and films, for example. By contrast, *Empathic Concern* and *Personal Distress* are associated with the more emotional side of empathy. *Empathic Concern* taps into the tendency to experience feelings of compassion and concern for observed individuals, whereas *Personal Distress* is associated with the individual's own feelings of fear, apprehension and discomfort in response to the negative experiences of others.

Theories of music-induced emotions suggest that some form of empathy may be involved in the emotional responses induced by music (e.g., Scherer & Zentner, 2001; Juslin & Västfjäll, 2008; Livingstone & Thompson, 2009). The proposed mechanisms range from pre-conscious 'motor resonance' with musical features that resemble vocal and motor expression of emotion (Molnar-Szakacs & Overy, 2006; Livingstone & Thompson, 2009) and emotional contagion (Juslin & Västfjäll, 2008) to empathizing with emotions and notions that are construed in the listener's imagination (e.g., Scherer & Zentner, 2001). Indeed, empirical investigations have shown that people who have a tendency to be more empathic experience more intense emotions in response to music (Vuoskoski & Eerola, 2012; Ladinig & Schellenberg, 2011), providing indirect evidence for the role of empathy in music-induced emotions. As people with high dispositional empathy are more susceptible to emotional contagion in general (Doherty, 1997), it may be that highly empathic people also experience emotional contagion from music more readily (Vuoskoski & Eerola, 2012). A complementary explanation is that empathic people may be more likely to engage in some form of reflective empathy during music listening, involving visual or narrative imagery, for example (e.g., Vuoskoski & Eerola, 2012; 2013).

Dispositional empathy has been associated with music-induced sadness in particular, as highly empathic people have been found to experience more intense sadness after listening to sad instrumental music (Vuoskoski & Eerola, 2012). Interestingly, empathic individuals also tend to enjoy sad music more than non-empathic individuals, suggesting that empathically experienced negative emotions such as sadness can be enjoyable in the context of music (Vuoskoski et al., 2012; Garrido & Schubert, 2011). Similar findings have been made in the context of films, where the experience of empathic distress while watching a tragic film has been associated with greater enjoyment of the film (De Wied et al., 1994). It is not yet known what the mechanisms behind such enjoyment are,

although the portrayal of more positive themes such as friendship, love, and human perseverance – often present in tragic films – have been proposed as one potential source (De Wied et al., 1994). However, it is not clear whether this explanation could also apply in the context of music. Nevertheless, these findings do suggest that there is something inherently enjoyable in empathic engagement in an aesthetic context – even when the experienced emotions could be nominally characterized as negative.

3.4 Music as a virtual person, music and subjectivity

People tend to describe music in terms of attributes commonly used to describe psychological attributes of people (Watt & Ash, 1998). Indeed, it has been suggested that music is capable of creating a 'virtual person' of sorts (Watt & Ash, 1998; Livingstone & Thompson, 2009). The musical expression of emotion bears a close resemblance to human vocal and motor expression of emotion, involving similar auditory and gestural cues (for a review, see Juslin & Laukka, 2003), and it has been proposed that listeners may respond to music as they would to the perceived emotional state of a conspecific (e.g., Livingstone & Thompson, 2009). However, music's capacity to represent a virtual person seems to go beyond acoustic and gestural cues that resemble vocal and motor expression of emotion. An example is provided by studies that have investigated people's reasons for listening to sad music when they already feel sad. These studies have found that some listeners can experience the music itself as providing empathy and understanding for the feelings that they are going through, functioning as a surrogate for an empathic friend (Lee, Andrade & Palmer, 2013; Van den Tol & Edwards, 2013). The participants in Van den Tol and Edwards's study felt that "the music was empathizing with their circumstances and feelings, supporting them, making them feel understood, or making them feel less alone in the way they were feeling" (Van den Tol & Edwards, 2013, p. 14).

Thus, it appears – at least for some people – that music is able to represent a virtual person with whom to empathize, and whom they can experience as empathizing with their felt emotions. There has been considerable interest in the musicological literature in the relationship between music and human subjectivity (e.g. Cumming, 2000; McClary, 2004), pursuing the idea that music has attributes either of an idealized person, or of an idealized collection or community of people. Lawrence Kramer (e.g. 2001; 2003) has written extensively about music as the instantiation of a kind of imagined subjectivity – not associated specifically with the composer, performers, or anyone else explicitly and literally engaged with the making of the music, nor simply as the mirror of a listener's own subjectivity, but in a more abstracted and generic manner. Likewise, the philosopher and violinist Naomi Cumming, in a paper that focuses on the violin introduction to the aria 'Erbarme Dich' from J. S. Bach's St. Matthew Passion, writes of how the listener does not just find her or his own subjectivity passively reflected back, but reconfigured:

> "The pathos of Bach's introduction, and its elevated style, are quite unmistakable, and recognition promotes empathy. Once involved with the unfolding of the phrase's subjectivity, the listener does not, however, find a simple reflection of his or her own expectancies. The music forms the listener's experience, and in its

> unique negotiation of the tension between striving and grief, it creates a knowledge of something that has been formerly unknown, something that asks to be integrated in the mind of the hearer." (Cumming, 1997: 17)

And in a still more explicitly psychological manner, DeNora (2000; 2003; 2013) has written of the ways in which music acts as a technology that affords a listener the opportunity to structure and organize their identity – in long-term ways, and as a way of managing their immediate emotional states and sense of identity. Writing of one of her informants, 'Lucy', DeNora points out how she (Lucy) uses music as a medium in which she can draw a connection between the musical material, her own identity, and a kind of social ideal. As Lucy herself expresses it, she 'finds herself', the 'me in life' within musical materials, in a manner that allows her to reflect on who she is and how she would like to be – a process that DeNora points out is not just private and individual:

> "Viewed from the perspective of how music is used to regulate and constitute the self, the[se] 'solitary and individualistic' practices … may be re-viewed as part of a fundamentally social process of self-structuration, the constitution and maintenance of self. In this sense then, the ostensibly private sphere of music use is part and parcel of the cultural constitution of subjectivity, part of how individuals are involved in constituting themselves as social agents." (DeNora, 2000: 47-8)

Music and musicking, then, can be viewed as a rich environment in which more or less active participants (listeners and makers) can engage with the real and virtual subjectivities of other real and virtual participants, and in doing so come to experience (and perhaps increasingly understand) the cultural perspective that those others (real or virtual) inhabit. Music is in this way both a *medium* for empathic (and antagonistic) engagement with others, and an *environment* in which to explore and experiment with a range of more or less projected, fantasized and genuinely discovered subject positions.

3.5 Sociological Perspectives

Turning from the rather individualistic accounts that have dominated the previous sections, towards understandings of music and empathy that take an explicitly social stance, sociological perspectives that enhance understanding of empathic processes derive from what may be termed the 'new sociology of art' (de la Fuente 2007). This sub-disciplinary paradigm investigates aesthetic materials for the ways that they may be seen to frame, shape or otherwise have an impact in social life. It is linked in turn to perspectives within sociology that cluster around the so-called, 'strong' program of cultural sociology (Alexander 2008) in which cultural materials are understood as active mediators of psycho-social and subjective processes and in which arts are not understood to be 'about' society or shaped 'by' society but rather 'in' society and constitutive of social relations (Hennion 2007). These 'new' sociologies of art and culture are in turn linked to a 'meso' perspective in sociology devoted to groups of actors understood as networks of people, practices (conventions, operations, activities with histories of use) and things (Fine 2010). They focus on interaction orders (Fine 2012), or local actions that produce forms of ordering. The interaction order is the place where meanings are created, validated and reproduced in ways that travel to other networks.

Within this meso perspective there is no macro-micro divide since both macro and micro are mutually produced within scenes and settings of activity. The focus on this concerted activity in turn offers considerable scope for examining the question of just how cultural forms, including musical forms, actually enter into action and experience (DeNora 2003).

The impetus for these perspectives comes from various distinct but complementary developments in sociology since the middle 1980s that describe the ways that aesthetic and symbolic materials 'anchor' action (Swidler 2002) by presenting actors with orientational materials that can inform, focus and specify styles and trajectories of action in real time. The concern with how aesthetic materials 'get into' action (Acord and DeNora 2012) is one that has been associated with other developments in sociology, most notably the turn from a focus on the cognitive components of action, and models of social actors as calculating beings, to a focus on embodiment and feeling (Witkin 1994). These developments resonate well with, and are further illuminated by, developments in the philosophy of consciousness that begin with notions of the 'extended mind' (Clark and Chalmers 1998) and draw out that concept to embrace 'the feeling body' (Colombetti 2013) in which embodied conditions and sensations are understood both to take shape in relation to things outside of individuals and to inform cognitive appraisal.

Insofar as feeling and embodiment can be understood to take shape through encounters with aesthetic materials and can be understood to cultivate sensibilities or predispositions in favour of some social scenarios (and thus, contrarily, away from others), aesthetic materials have been highlighted within sociology as sources of social order. In this respect, the 'new' sociology of art harks back to Adam Smith's ideas of sympathy and the capacity for fellow feeling discussed above, in which Smith suggests that the capacity for fellow feeling and being able to imagine the other is a lynchpin of mutual orientation and, thus, social stability. While Smith makes it clear that sympathy (the capacity to imagine the other) is not empathy (the capacity to feel what the other is feeling, literally to share their experience), Smith's focus on the prerequisites for achieving sympathy highlight the importance of bodily processes. Specifically, Smith describes how, if sympathy is to be achieved, it is necessary for actors to moderate their passions (tamp down, raise up levels of intensity or 'pitch' as Smith calls it) so as to encourage mutual engagement through shared modalities of feeling (Smith 1759: I. I. 36-39). In this respect, Smith's interest in mutual emotional calibration, understood as a prerequisite of mutual understanding, resonates with Alfred Schutz's concept of attunement, understood as the prerequisite for 'making music together' (his example is the performance of a string quartet used as a case in point of social action writ large and the need for mutual orientation, entrainment, calibration and the gestalt to which they give rise, namely, shared feeling forms).

Classical sociology can, in short, be read as offering important leads for the study of empathy, understood as emotional and embodied mutual orientation, predisposition and preference, and in this sense it can also be read as offering an excellent basis for appreciating 'art in action' and the role of the arts in underwriting communicative action or how we bind ourselves together in time, whether in conversation, with its prosodic and timing patterns (Scollon 1982), or more generally, as Trevarthen puts it, as '... the dynamic sympathetic state of a human person that allows co-ordinated companionship

to arise' (cited in Ansdell et al 2010). As such the arts, and in the case of this project, music, can be conceptualised as offering materials for shaping up the feeling body from infancy to old age, in a wide range of roles and guises.

But if the arts and music more specifically 'get into' action, the question, as stated earlier, remains: how does this happen and can we trace that process? And in relation to empathy, this question can be posed in terms of how shared feeling states, sensibilities and predispositions come about, and how they can be cultivated and thus also how they may be – more problematically – controlled (Hesmondhalgh 2013; Born 2012; DeNora 2003). Within sociology the most fruitful paradigms have focused upon learning, mostly informal situated learning, among which the classic work on this topic is Howard S. Becker's 'Becoming a Marijuana User' (1953).

Becker's piece has been used by subsequent scholars to develop new (grounded) theories of how culture gets into action from comparisons of how one learns to respond to musical 'highs' (Gomart and Hennion 1999) to how one learns to feel and respond sexually (Jackson and Scott 2007; DeNora 1997) and how one learns to respond in various workplaces and forms of occupation (Pieslack 2009; DeNora 2013) and how one manages and modifies emotions and energy levels as part of everyday self-care (DeNora 2000; Batt-Rawden, DeNora and Ruud 2005; Skånland 2010) or in scene-specific settings such as retail outlets (DeNora 2000). Specifically these studies have followed the ways that individuals and groups engage in processes of modelling, adjustment, tutoring and directing and attempted alignment with musical materials in ways that draw out emotional and embodied sensation and experience in musically guided ways. This work helps to highlight just how deeply culture can come to penetrate embodied processes and experiences, and thus dovetails with more recent work on the culturally mediated experience of health and wellbeing.

3.6 Music Therapeutic and Wellbeing Perspectives

The focus on music, health and wellbeing is a growing area (Koen et al 2008; MacDonald et al 2012; MacDonald 2013). It encompasses music therapeutic perspectives, community music, psychotherapeutic perspectives and more overtly medical applications as well as the history of medicine and healing. At the level of the individual, and in overtly medical contexts, research in these areas has documented music's potential for the management of pain (Edwards 2005; Hanser 2009), anxiety (Drahota et al 2012), palliative care (Aasgaard 2002; Archie et al 2013; DeNora 2012), and immunology (Fancourt et al 2013; Chandra and Levitin 2013) all of which emphasise mind-body-culture interaction. At the broader level at which music connects with and can be seen to contribute to wellbeing, music has been described ecologically as part of salutogenic (health-promoting) space (DeNora 2013).

In all of this work, there are excellent resources for the study of empathy, in particular for investigating empathy – understood as sensibility, perception and orientation – as musically mediated. Specifically, the focus on the malleability of consciousness and self-perception (Clarke and Clarke 2011) points to a human capacity for entering into different modes of awareness, ones that are simultaneously sensitising (aesthetic) and desensitising (anaesthetic), and in so doing indicates the importance – and power – of

the cultural technologies through which altered states can be achieved. The case of music and pain management illustrates many aspects of this theme.

As Hanser has described it, recent theoretical understandings of pain have moved toward a multi-dimensional conception of pain perception, one in which pain is not unmediated but rather comes to be experienced in relation to cultural and situated interventions, including music. In part, musical stimuli simply compete with neural pain messages. But more interestingly, music stimulates both oxytocin and embodied sympathetic responses (Grape 2002; Hurlemann et al 2010). Recent interdisciplinary perspectives highlight how the music, in tandem with other biographical and contextual factors, may lead a person in pain into alternative situations, ones in which she/he becomes sensitised to musically inspired associations and desensitised to the former situation of being in pain. Thus, music cannot necessarily address the cause of the pain but it can redirect the sensation of pain by capturing consciousness in ways that recalibrate it (DeNora 2013). So too, in the Bonny Method of Guided Imagery and Music (Bonde 2012) music may provide a grid or template against which knowledge-production (memory, self-and mutual-understanding, historical accounts) can be elaborated and scaffolded in ways that can be used to diminish 'negative' emotions and associations, effectively recalibrating perception and, in this case, the self-perception of pain.

Methodologically, the music therapy index (Nordoff & Robbins 2007), a highly detailed real-time log of musical and para-musical action, can be used to display key or pivotal moments of musically instigated or musically guided action (movement, shifts in comportment, utterances). So too, the 'musical event' scheme can be used to track with some precision the ways in which the musical permeates the paramusical and vice versa across time and – in keeping with the meso focus described earlier – networks (DeNora 2003; Stige and Aarø 2012)

More generally, and in ways that draw music therapy and music and conflict resolution into dialogue, musical engagement may be used to transform psycho-social situations, again leading the actor or actors away from the perception of distressing features of body/environment and toward more positive features and scenarios, and in ways that may also contribute to hope, patience and general mental wellbeing (Ansdell et al 2010; Ansdell 2014) as well as broader forms of cross-cultural and interactional accord, linked to music and guided imagery (Jordanger 2007). Community Music Therapy has perhaps most notably described music's role in the production of communitas, through joint improvisation and as a means of generating proto-social capital (Procter 2012). Within the growing field of music and conflict transformation studies (Laurence 2007), a key theme has focused on the importance of shared practice and actual grass-roots (bottom-up) musicking as a prerequisite for enduring forms of change (Bergh 2011; 2010; Robertson 2010). In particular, as Bergh has described, if music is to contribute to enduringly altered practice, or altered consciousness of the other, that endurance requires continued and repeated practice – continued and repeated participation in musical activity. And as we have already indicated, music is by no means an unmitigated 'good' within the conflict transformation literature: as Bergh has observed (Bergh 2011), music can be – and has been – used to inculcate feelings of animosity, or for purposes of oppression and torture (Cusick 2008); and historically has been incorporated into

military culture through drill, march music and, more recently, through psych-op motivational techniques (Gittoes 2004; Pieslack 2009). Indeed Laurence (2007: 33), even while writing of the potential for music in conflict resolution, argues that inculcating peaceful values is one of music's *rarest* uses, and that "of music's purposes, many and probably most, serve the ongoing ends of power relationships one way or another."

3.7 Cross-cultural perspectives

The final category of literature that we consider in this report touches on the potentially vast question of cultural and cross-cultural understanding. Within the psychology of music there has been an interest in the relationship between possibly 'universal' and culturally specific aspects of musical communication dating back to the very beginnings of both the psychology of music and ethnomusicology in the work of Carl Stumpf (Stumpf & Trippett 1911/2012). Among other more recent empirical studies, Balkwill, Thompson, & Matsunaga (2004) have shown that music can successfully communicate emotional meanings across different cultures, but ethnomusicologists, perhaps rightly suspicious of simplistic notions of inter-cultural communication, have pointed to issues of representation, and of the incommensurability of concepts (or in this case emotional meanings) across cultural contexts as factors that might undermine the validity of a naïvely empirical approach (Stock 2014). A number of authors have recently proposed the value of a 'relational musicology' that might tackle issues of inter-cultural understanding, including Cook (2012: 196) who argues for relational musicology as "a means of addressing key personal, social and cultural work that is accomplished by music in today's world." One specific kind of 'cultural work' that has recently been addressed in ethnomusicology that is of direct relevance to this project is the affective and social work that is accomplished by/within modern 'sentimental' cultures. Martin Stokes (2007; 2010) has provided vivid accounts of the emotional, intimate and affiliative character of contemporary sentimental musical cultures in Egypt and Turkey, and Butterworth (2014) in relation to Peruvian huayno music, in which something very much like empathy (though Stokes relates it more directly to a 'Smithian' - as in Adam Smith - notion of sympathy) is understood as a cultural construct or condition. In Stokes's words (2010: 193), one might view "sentimentalism as a kind of civic project, a way of imagining affable relations of dependence on strangers in modern society." This is a very different perspective on empathy – one that sees it as a social achievement, rather than personality trait; a collective skill, rather than the expression of a circuit of ten interconnected brain regions (cf. Baron-Cohen 2011). As Cook (2012) argues in relation to the relational understanding of musical methods from one domain applied to another (Schenkerian analysis and Chinese music; Nineteenth century Western transcriptions of Indian melodies that were presented as 'authentic Hindostannie airs'), such encounters – conceived within an appropriate relational conceptual framework – offer a domain of shared experience and cross-cultural understanding.

4. Can music listening evoke empathy? An empirical investigation

As outlined in section 3.2 of this report, previous research has shown that music-related, participatory activities may promote empathy and affiliation (e.g., Rabinowitch et al., 2012; Valdesolo & DeSteno, 2011). These findings are in line with evolutionary theories

suggesting that music-making may have served an evolutionary function by promoting group cohesion and affiliation (e.g., Cross & Morley, 2008). However, it is not yet known whether these empathy-promoting effects are limited to musical activities involving active interpersonal participation, or whether activities such as music listening may also produce similar effects. Previous work has revealed that exposure to music with prosocial lyrics may indeed promote prosocial behaviour by increasing the accessibility of prosocial thoughts and empathy (Greitemeyer, 2009, 2011), but it remains unclear to what extent musical aspects might have contributed to the observed effects.

To investigate the possibility that music listening might evoke empathy and affiliation in listeners, we designed an empirical study utilizing a quasi-experimental design. As previous research has shown that certain empathy-promoting activities – such as explicitly mimicking the actions of an outgroup member – can reduce prejudice against the outgroup more generally (Inzlicht et al., 2012), we hypothesized that – if music listening is indeed able to evoke empathy and affiliation – listening to music from a particular culture might also reduce prejudice and increase affiliation towards members of that culture more generally. To this end, two cultures with compelling yet distinct and widely recognized musical styles – Indian and West African – were selected. In order to minimize the potential effect of demand characteristics, and the influence of assumptions about attitudinal values, it was deemed important that the degree of evoked empathy was measured in an implicit manner (i.e. in a manner that was not amenable to conscious intervention). The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) can be used to measure associations between categories (such as ethnic groups) and positive or negative valence, reflecting the degree of unconscious preference for one group over another. Arguably, these kinds of IATs can be used as a proxy for empathy, as they have been reliably associated with differential empathic reactivity (sensorimotor brain responses) to the pain of same- vs. different-race individuals (Avenanti, Sirigu, & Aglioti, 2010), and the degree of somatosensory resonance for different-race individuals (the Visual Remapping of Touch-effect; Fini et al., 2013).

We hypothesized that if music listening can indeed evoke empathy and affiliation, then listening to Indian music should lead to an implicit preference for Indian (relative to West African) people, while listening to West African music should lead to an implicit preference for West African (relative to Indian) people. Furthermore, we hypothesized that – as dispositional empathy has previously been associated with sensitivity to the emotional effects of music listening (Vuoskoski & Eerola, 2012) – participants with high dispositional empathy would be more susceptible to the effects of Indian or West African music than those with low dispositional empathy. In other words, participants with high dispositional empathy listening to Indian music, for example, should display a more marked implicit preference for Indian (relative to West African) people than participants with low dispositional empathy. The methods and materials used in the experiment are described in detail in the Appendix (Research Methodology and methodological advances).

4.1 Results

To compute the D-values for each participant, we used the improved scoring algorithm described in Greenwald et al. (2003). The D-value reflects the strength of participants' unconscious preferences for Indian relative to West African people, with negative values indicating an unconscious preference for Indian (relative to West African) people, and positive values indicating a preference for West African people. Values between 0 and 0.15 indicate little to no relative preference, values between 0.15 and 0.35 a slight relative preference, values between 0.35 and 0.65 a moderate preference, and values over 0.65 a strong relative preference. Participants' D-values and IRI scores were screened for outliers using Tukey boxplots, which resulted in the removal of 3 participants from the data. Thus, N = 58 for the statistical analyses.

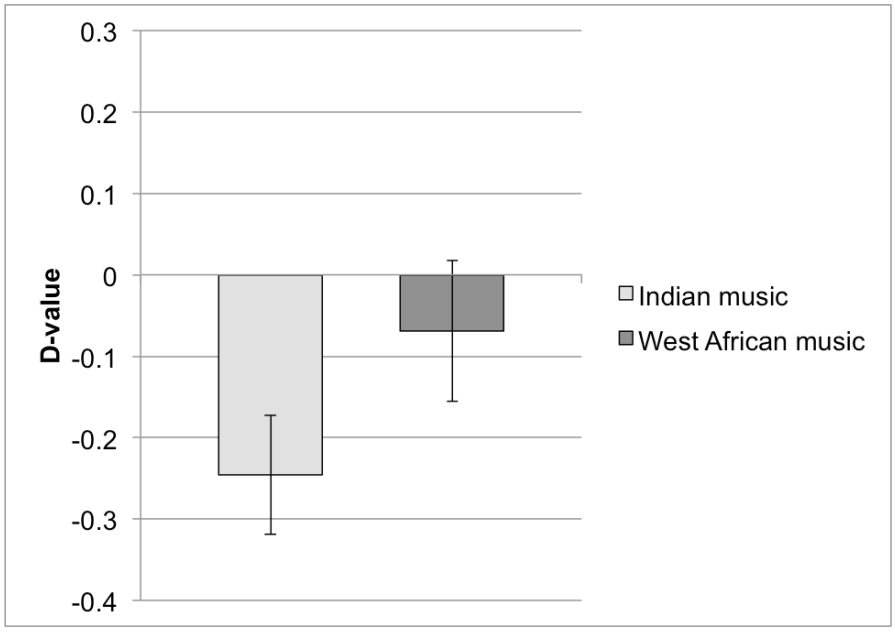

Figure 1. Mean IAT scores (D-values) ± standard error of the mean, grouped by condition. Positive D-values indicate an unconscious preference for West African (relative to Indian) people, and negative values indicate an unconscious preference for Indian (relative to West African) people.

[Alt Text for Figure 1: Figure showing Mean IAT scores (D-values) for the two music conditions]

To investigate the effect of listening to Indian vs. West African music on participants' D-values – as well as the hypothesized moderating effect of dispositional empathy on the effects of music – we conducted an ANCOVA with the Type of Music (Indian or West African) as a factor, and Dispositional Empathy (global IRI scores) as a covariate. We also included an interaction term of Type of Music and Dispositional Empathy in the model. There was no significant main effect of Type of Music; $F(1,54) = 2.59$, $p = .11$, although the trend was in the anticipated direction with participants exposed to Indian

music displaying a slight preference for Indian (relative to West African) people, and participants exposed to West African music displaying no apparent preference. The mean D-values of the two groups are displayed in Figure 1. As might have been expected, Dispositional Empathy was not significantly related to IAT scores when examined across the two conditions; $F(1,54) = 0.20$, $p = .89$. However, there was a significant interaction between Type of Music and Dispositional Empathy; $F(1,54) = 5.51$, $p = .023$, $\eta_p^2 = .09$, suggesting that dispositional empathy indeed moderated participants' susceptibility to the musical manipulations. The relationship between dispositional empathy and D-values in the two groups is displayed in Figure 2. We also investigated the potential contributions of musical training, sex, and subjective responses to the music (ratings of liking and felt emotional impact) to the D-values, but no statistically significant relationships were found.

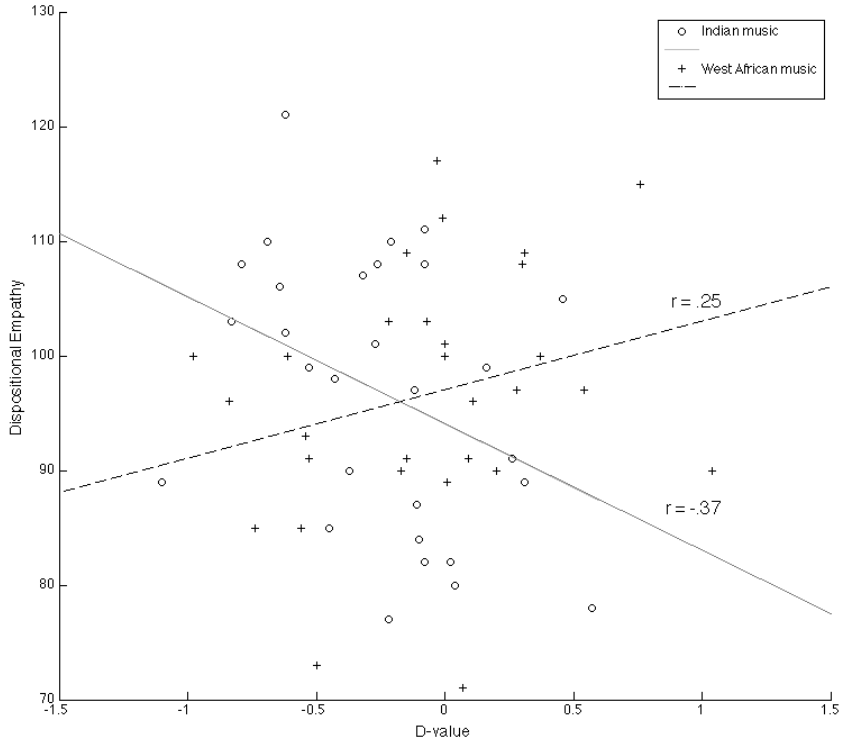

Figure 2. The relationship between dispositional empathy and IAT scores (D-value), grouped by condition. Positive D-values indicate an unconscious preference for West African (relative to Indian) people, and negative values indicate an unconscious preference for Indian (relative to West African) people.

[Alt Text for Figure 2: Figure showing the relationship between dispositional empathy (IRI score) and IAT scores (D-values)]

4.2 Conclusions

The empirical study has provided preliminary evidence for the hypothesis that listening to music without any explicit semantic content (such as comprehensible lyrics) can evoke empathy and affiliation in listeners with high dispositional empathy. This interpretation is supported by the significant interaction between Type of Music and Dispositional Empathy, which revealed that people with high dispositional empathy scores were more likely to display an unconscious preference for the ethnic group to whose music they were exposed than those with low dispositional empathy scores. The fact that high dispositional empathy made participants more susceptible to the musical manipulations suggests that the observed findings cannot be explained in terms of priming or knowledge activation effects, such as those observed in the case of background music and purchasing decisions (e.g. North, Hargreaves & McKendrick, 1999). The lack of a statistically significant relationship between the IAT scores and liking ratings also indicates that our findings cannot be accounted for by a simple preference effect (cf., Nantais & Schellenberg, 1999).

Instead, we propose that the more empathic participants may have been more open to the music, and more likely to *entrain* with the music – involving internal mimicry and emotional contagion; and may also have been more likely to engage in reflective empathy, in the form of visual and/or narrative imagery, and/or semantic elaboration. In the context of music, entrainment comprises both temporal as well as affective components (see e.g., Phillips-Silver & Keller, 2012), and – in general – imitation and entrainment have been found to both reflect and elicit affiliation (see section 3.2 Chartrand & Bargh 1999; Hove & Risen 2009). Since people with high dispositional empathy have been found to exhibit stronger motor and sensory resonance to observed actions, and the pain of others (Gazzola, Aziz-Zadeh & Keysers, 2006; Avenanti et al., 2008), it is possible that empathic people are also more likely to resonate with the acoustic and gestural features of music. This stronger resonance could explain why empathic individuals are more susceptible to emotional contagion from music (cf. Vuoskoski & Eerola, 2012), and why they also appear to be more sensitive to the affiliation-inducing effects of music listening.

However, further investigation is required in order to better understand the phenomenon, and to distinguish between the potential contributions of pre-reflective motor and affective resonance, and the more reflective empathy involving imagery, perspective-taking, and other extra-musical associations. As dispositional empathy comprises both emotional reactivity and cognitive perspective-taking attributes, either or both of these components may contribute to the observed affiliation-inducing effects of music listening. A possible way to investigate this would be to implement a non-demanding distractor task during the music listening, which would limit participants' capacity to conjure up imagery and other extra-musical associations. Furthermore, the failure to find a statistically significant main effect of Type of Music on participants' implicit associations could either be due to the fact that the variation in participants' pre-existing preferences for Indian vs. West African people was too great in relation to our sample size, or that the participants with low dispositional empathy were simply not affected by the music. Future studies could attempt to investigate this issue by

implementing pre- as well as post-manipulation measures of implicit associations, although there may be other, more problematic issues associated with exposing participants to Indian and West African images prior to the musical manipulations.

5. General Discussion, Implications, Prospects

The result of our empirical study provides some evidence for the capacity of music – even when encountered in arguably the most passive circumstances (solitary headphone listening in a 'laboratory' setting) – to positively influence people's unconscious attitudes towards cultural others. Specifically, people with higher dispositional empathy scores show more differentiated positive associations with images of people from two different cultural groups after listening to music explicitly belonging to that cultural group than do people with lower dispositional empathy scores. This is a striking result, and provides what might be characterized as narrow but 'hard-nosed' evidence for music's positive inter-cultural potential, and we have speculated on the broad psychological mechanisms (including entrainment, mimicry, emotional contagion, and semantic elaboration) that may be responsible.

But a number of notes of caution also need to be sounded. We have no evidence for the robustness or duration of the effects that we have observed: it may be that this is a very temporary shift that is easily disrupted, casting doubt on the practical efficacy of music as an agent of change in cultural understanding. And in the light of the interaction with dispositional empathy, the result suggests that any practical efficacy might be confined to those individuals who are already predisposed to be empathic towards others – arguably those people who are (to put it simplistically) the least urgent cases. Are we then forced to conclude that music has little or no power to change attitudes among those people who are most resistant? Perhaps more seriously, music – as we have already indicated – is arguably as capable of distinguishing (cf. Bourdieu 1984/1979), dividing and alienating people as it is of bringing them together. Hesmondhalgh (2013: 85) points out that "Music can reinforce defensive and even aggressive forms of identity that narrow down opportunities for flourishing in the lives of those individuals who adhere to such forms of identification", and provides a vivid anecdotal example of just such a defensive/aggressive encounter with or through music. He describes a Friday night out with friends at a pub where an Elvis impersonator is performing. Having at first dreaded the performance, Hesmondhalgh and his friends, along with a large number of strangers who are also in the pub for a night out, are quickly won over and join with one another, and the performer, with increasing intensity. The chorus of the final song "elicits an ecstasy of collective singing, women and men, all at the top of our voices. There are smiles and laughter, but there's melancholy too. It seems that bittersweet lines from the Elvis repertory are invoking thoughts about relationships, past and present… [We] stagger out of the pub feeling we've had a great night, and that the working week has been obliterated by laughter and bittersweet emotion. Unwittingly, I brush against a man's drink as I'm leaving, and he follows me out demanding an apology for his spilt beer… The power of Elvis's music, it seems, has brought strangers and acquaintances together, and with a formidable intensity. But my pursuer has reminded me unpleasantly that there are those who feel excluded from such collective pleasures. If music-based gatherings answer to our need for sociality and attachment, and combat

loneliness, might they also evoke envy when others miss out?" (Hesmondhalgh 2013: 103-4)

Are we to regard music's affiliative and divisive attributes as two sides of the same coin, or as a more fundamental incompatibility between emancipatory and oppressive qualities? Indeed, rather than considering how music might help to make a bridge between apparently pre-existent cultural ghettos, should we not be asking in what ways music is already implicated in the establishment and maintenance of those very ghettos in the first place? These are significant challenges to the potentially starry-eyed representation of music that an uncritical attitude might project; but as Hesmondhalgh, again, puts it: "Music's ability to enrich people's lives [and expand their empathic understanding] is fragile, but I believe it can be defended better if we understand that fragility, and do not pretend it floats free of the profound problems we face in our inner lives, and in our attempts to live together." (Hesmondhalgh 2013: 171)

Part of understanding that 'fragility' is considering what, if anything, is special about music as a force for (compromised) cultural benefit. Why not football, or food – both of which can lay claim to mass engagement and global reach? Is there anything about music that affords either particular, or particularly powerful or efficacious kinds of inter-cultural engagement? One way to tackle these questions is consider what the mechanisms for empathy and cultural understanding might be, and in what ways those mechanisms are engaged by different cultural manifestations – whether those are music, food or football. As our critical review of the literature reveals, this is a fascinating but considerable challenge, and one that turns in part on how broad or narrow a conception of empathy is entertained. One approach might be to admit a considerable range of inter-subjective engagements as occupying different positions on an empathy spectrum, from conditions of self-other identity in the context of what might be called 'deep inter-subjectivity' (perhaps emblematically represented by that pre-Oedipal oneness between mother and infant); through powerful experiences of compassionate fellow-feeling; to the operation of much more controlled and deliberate rational, imaginative projection into the circumstances of others. Some (such as Adam Smith, Felicity Laurence and Colwyn Trevarthen) would want to make firm distinctions between, say, empathy and sympathy. But an alternative might be to agree on an umbrella term (and empathy might do), and then focus on what distinguishes different positions under the umbrella, and what the implications (practical, functional, conceptual) of those differences might be.

A common thread that runs through most of these positions is the central role of embodiment in empathy. From the most neuroscientifically reductionist approach (e.g. a 'fundamentalist' mirror neuron perspective) to the position of Smith or Stokes, a capacity to *feel* the situation of another underpins the inter-subjective character of empathy/fellow-feeling/sympathy. And arguably it is in this respect that music has 'special properties' – properties of enactment, of synchronization and entrainment in situations ranging from a single individual alone with their music (the solitary headphone listener 'lost in music' – cf. Clarke 2014) to massively social contexts (pop festivals, simulcasts) where enormous numbers of people can participate in collective, synchronized, embodied engagement. As others have pointed out (e.g. Cross 2012),

music is a uniquely widespread, emotionally and physically engaging, social, participatory and fluidly communicative cultural achievement – a powerful (cultural) ecological niche that affords extraordinary possibilities for participants,[7] and which both complements and in certain respects surpasses those other global cultural achievements in which human beings participate (language, religion, visual culture, craft). There is little, perhaps, to be gained by attempting to set any one of these up on a uniquely high pedestal – but equally it is important not to flatten the terrain by failing to recognize music's particular combination of affordances in this rich cultural mix: cognitive and emotional complexity, from solitary to mass-social engagement, compelling embodiment, floating intentionality (Cross 2012), synchronization/entrainment, flexible mimicry, temporal and ambient character, and digital-analog mix.[8]

As our critical review of the literature has revealed, the empathy-affording character of this mix of affordances has been explored and theorized across an astonishing range of disciplines – invoking mechanisms that range from mirror neurons to semiotics and the cultural history of sentimentalism. Are these kinds of explanation in any way compatible with one another, and is there a way to avoid a simplistic and potentially reductionist 'layers of an onion' approach in which supposedly 'fundamental' biological attributes (whether those are genetic – in the case of a narrowly 'trait' perspective on empathy; or neurological – in the case of sensorimotor contingency theory) underpin progressively more ramified and arbitrary cultural constructs? We have already seen (e.g. Heyes 2010) that from within the scientific literature itself, as well as from outside it, there is ample evidence for the plasticity of so-called fundamental properties, and for the reciprocal relationship between biology and culture. Mirror neurons may be as much a *consequence* of a culture of inter-subjective engagement as they are a foundation for it. But it clearly remains a considerable challenge to develop in detail the more flexible and relational approach that we point towards in this report.

Finally, there is the question of the utility of the concept or term 'empathy' itself. Perhaps rather like the word 'meaning', it both enables and suffers from the capacity to bring together a wide range of phenomena, which critics may find unhelpful in its heterogeneity. We share the concern not to confuse chalk with cheese, but against a drive to compart-mentalize (*sic*) we are persuaded of the long-term value of sticking with a word and its associated conceptual field which, although still just a century old, offers a rich and powerful way to try to understand a central element of human sociality. The debates about whether to understand empathy as a genetic predisposition, a personality trait, an emergent attribute of perception-action coupling, a skill, or a social achievement are symptomatic of the conceptual reach of the term. Engelen and Röttger-Rössler (2012), in a brief overview of a special issue of the journal *Emotion Review* devoted to empathy, declare in their first sentence that "there is no accepted standard definition of empathy—either among the sciences and humanities or in the specific disciplines" (3), but nonetheless emphatically endorse the importance of continuing to develop better understandings of that fundamentally social capacity to "feel one's way into others, to take part in the other's affective situation, and adopt the other's per-spective… to grasp the other's intentions and thus to engage in meaningful social interaction." (5) We, too, are committed to the value of that enterprise, and to the specific role that music may play in understanding empathy, and as itself a 'medium' for

empathy. In addressing the complex network of relationships between neighbouring terms (sympathy, compassion, contagion, entrainment, 'theory of mind', attunement…) we see the prospect of a more nuanced and differentiated understanding of what Baron-Cohen (2011: 107) has characterized as "the most valuable resource in our world" and "an important global issue related to the health of our communities."

Notes

1. "In 1999, Daniel Barenboim and Edward Said founded the West-Eastern Divan as a workshop for Israeli, Palestinian and other Arab musicians. Meeting in Weimar, Germany – a place where the humanistic ideals of the Enlightenment are overshadowed by the Holocaust – they materialized a hope to replace ignorance with education, knowledge and understanding; to humanize the other; to imagine a better future. Within the workshop, individuals who had only interacted with each other through the prism of war found themselves living and working together as equals. As they listened to each other during rehearsals and discussions, they traversed deep political and ideological divides. Though this experiment in coexistence was intended as a one-time event, it quickly evolved into a legendary orchestra." From http://www.west-eastern-divan.org/, accessed 20 August 2014.

2. Baron-Cohen and Wheelwright have developed their own psychometric tool – the so-called Empathy Quotient (EQ; Baron-Cohen and Wheelwright, 2004).

3. The title of Baron-Cohen's book is *Zero Degrees of Empathy: A New Theory of Human Cruelty and Kindness*, and he takes psychopaths and autists as negative and positive manifestations of the 'zero degree' condition.

4. Baron-Cohen cites an exceptionally sensitive counselor as an example.

5. Mirror neurons were first discovered in Macaque monkeys, but there is now wide acceptance of the evidence for the same kinds of neurons, with the same functions, in humans.

6. The discovery was first made in relation to visual observation (monkeys *watching* another individual reach for an object) subsequent research has also revealed the operation of auditory mirror neurons (e.g. Kohler et al. 2002) – a matter of obvious significance for music.

7. Participation in music ranges from the obviously enactive (improvising, composing, performing) through various modes of more or less active listening, dancing, and singing along; to a whole variety of digitally/web-mediated engagements with music such as down/up-loading, and the limitless discourse about music. Small's (1998) term 'musicking' is an attempt to embrace all this.

8. What we have in mind with this last is the entanglement of discrete categories (pitches, rhythmic units, formal structures) with continuously variable attributes (intonation, expressive timing, improvised ramifications/extemporizations); and of presentational attributes (sound, movement, palpable presence) with representational systems (notations, modes of recording, discourses).

Appendix: Research Methodology

The primary research in this project consists of 1) a large-scale critical literature review; and 2) a piece of novel empirical work related to one aspect of the claims made for music in relation to empathy and cultural understanding. The literature review thus engages (to some extent) with the methods used in the literature that we critically review, ranging from the empirical methods of neuroscience (scanning methods of various kinds) and psychology (laboratory and 'real-world' behavioural methods); through psychometric methods associated with empathy understood as a trait; ethnomethodological and micro-social methods of broadly sociological approaches to music in everyday life; to the more hermeneutic approaches of analytical and cultural musicology.

The second component of the project was to carry out of a novel piece of empirical work, investigating the possible effects of 'passive' exposure to the music of a culture on listeners' attitudes to visual representations of individuals from that culture. This study involves the use, for the first time we believe, of a combination of methods used elsewhere in the empathy/affiliation research literature, but not previously used for music. The method makes use of the relationship between a psychometric measure of empathy (the Interpersonal Reactivity Index – IRI; Davis, 1980) and a response task that measures implicit attitudes to the association between conceptual categories – the Implicit Association Task (IAT - Greenwald, McGhee, & Schwartz, 1998). The methods and materials used in the empirical study are described in detail in the following section.

Methods and Materials Used in the Empirical Study

Participants

Sixty-one participants aged 18 to 45 years (M = 24.07, SD = 5.78, 60.7% female) took part in the experiment, and were randomly assigned to one of two conditions (Indian music or West African music). Thirty-six participants (59.0%) had received formal musical training, while four participants (6.6%) identified themselves as self-taught musicians. With regard to the ethnic background of the participants, 28 participants (45.9%) identified themselves as White British, 22 participants (36.1%) as Other White, six (9.8%) as Asian/Asian British (Chinese or Korean), three (4.9%) as Mixed/Multiple ethnic groups, one (1.6%) as Caribbean/Black British, and one (1.6%) as Asian/Asian British – Bangladeshi.

Materials

Six popular music excerpts – three Indian and three West African – were selected for pre-testing. Each song was performed by a female vocalist, and was sung in a language

unfamiliar to the vast majority of participants. In the pilot experiment, participants were asked to judge each excerpt in terms of its emotional impact, approachability, likability, perceived emotional expression (valence and arousal), and ability to evoke empathy. The participants in the pilot experiment were 29 undergraduate music students aged 18 to 23 years (M = 19.86, SD = 0.89, 51.7% female). As all excerpts received comparably high ratings of emotional impact, likability, and ability to evoke empathy, the one Indian and one West African piece that were rated most similar in terms of approachability and perceived valence and arousal were chosen for the actual experiment. The Indian popular music piece was *Harjaiyaan* (Trivedi, 2014; duration 4 min 47 s), sung in Hindi by Nandini Srikar, and the West African popular music piece was *Wililé* (Diawara, 2011; duration 4 min 50 s), sung in Wassoulou by Fatoumata Diawara.

Participants' affiliative attitudes towards Indian and West African people were measured using the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The IAT measures the strength of associations between categories (e.g., Indian and West African) and attributes (e.g., good and bad) in an implicit manner, and can thus reveal unconscious preferences for categories (relative to each other). In the IAT, stimulus exemplars from four categories are sorted using just two response keys, each of which is assigned to two of the four categories (e.g., *West African* and *good*, and *Indian* and *bad*). The sorting task should be easier (i.e., the response time should be shorter) when the two categories that share a response key are strongly associated. The IAT it often reveals associations that participants would prefer not to reveal, suggesting that it is resistant to demand characteristics and faking (Banse, Seise, & Zerbes, 2001; Nosek et al., 2007). Similarly to IAT materials designed to measure racial bias (e.g., Cunningham et al., 2001), the stimuli consisted of 12 black-and-white pictures of the faces of Indian and West African people (6 pictures each; 3 female and 3 male) that were cropped around the upper lip and eyebrows (100 x 75 pixels); and 16 words (8 pleasant and 8 unpleasant). The pleasant words were *joy, love, peace, wonderful, pleasure, glorious, laughter,* and *happy,* and the unpleasant words were *agony, terrible, horrible, nasty, evil, awful, failure,* and *hurt*. The pictures were pre-tested in a pilot experiment (N=13), confirming that the West African face pictures were unanimously recognized as West African, and the Indian face pictures as Indian.

The Interpersonal Reactivity Index (IRI; Davis, 1980) was used to measure participants' dispositional empathy. The IRI has 28 items that tap into two separate aspects of global empathy: the cognitive perspective-taking capabilities, as well as the emotional reactivity of an individual. The items were rated on a 5-point Likert scale ranging from 1 (does not describe me well) to 5 (describes me very well).

Procedure

The experiments were conducted on iMac computers (running Mac OS X), using customized *Inquisit* software (version 4.0; Inquisit, 2014) purpose-designed to run the experiment and collect the data. In order to minimize the potential effect of demand characteristics, the participants were not given full information about the actual purpose of the experiment. The participants were told that the experiment was designed to investigate the effect of music listening on their performance on a timed sorting task, and – in line with the cover story – the participants started the experiment by

completing a practice IAT involving female and male names and pictures of insects and flowers. After the practice IAT, the participants listened to either the Indian or the West African popular music using high-quality headphones (Sennheiser HD 219). The participants were told the name of the performer and the music's area of origin (India or West Africa), and they were instructed to "allow [themselves] to be immersed in the music". After listening to the whole track, the participants completed the IAT featuring Indian and West African faces and good and bad words. We used the IAT procedure described in Greenwald et al. (2003; see Table 1 for the sequence of trial blocks), with the order of blocks balanced across participants and conditions. After completing the Indian vs. West African IAT, participants answered some questions about the music listening task (ratings of liking and felt emotional impact, and free descriptions of thoughts that occurred during the music listening) and pertinent demographic questions, and completed the Interpersonal Reactivity Index. The entire experiment took about 30 minutes to complete. After completing the experiment, participants were fully debriefed, and had the opportunity to ask questions about the study and its purposes. All participants received monetary compensation (£5) for taking part in the experiment.

Table 1

Sequence of Trial Blocks in the Indian vs. West African IAT

Block	No. of trials	Items assigned to left-key response	Items assigned to right-key response
1	20	West African faces	Indian faces
2	20	Pleasant words	Unpleasant words
3	20	Pleasant words + West African faces	Unpleasant words + Indian faces
4	40	Pleasant words + West African faces	Unpleasant words + Indian faces
5	20	Indian faces	West African faces
6	20	Pleasant words + Indian faces	Unpleasant words + West African faces
7	40	Pleasant words + Indian faces	Unpleasant words + West African faces

Note: For half of the participants in both conditions, the positions of Blocks 1, 3, and 4 were switched with those of Blocks 5, 6, and 7, respectively.

[Alt Text for Table 1: Table showing the sequence of trial blocks in the IAT]

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The Cultural Value Project seeks to make a major contribution to how we think about the value of arts and culture to individuals and to society. The project will establish a framework that will advance the way in which we talk about the value of cultural engagement and the methods by which we evaluate it. The framework will, on the one hand, be an examination of the cultural experience itself, its impact on individuals and its benefit to society; and on the other, articulate a set of evaluative approaches and methodologies appropriate to the different ways in which cultural value is manifested. This means that qualitative methodologies and case studies will sit alongside qualitative approaches.