

Running head: Emotional intelligence & music

Emotional intelligence, alexithymia, stress and peoples' reasons for listening to music

Word count: 5,395 excluding tables and references

Abstract

The present study investigated the relationship between people's reasons for listening to music, trait emotional intelligence and alexithymia whilst also controlling for the effect of participants' gender, age and perceived stress levels. In keeping with previous research, initial findings indicated that emotionally intelligent individuals were less likely to use music to relieve and alleviate negative moods, whilst those who had high scores on a measure of alexithymia were more likely to use music for the same reasons. However, when the effects of gender, age and perceived stress were controlled for these relationships were no longer significant and previously non-significant relationships between trait emotional intelligence and using music to manipulate arousal and to reminisce about the past were found to be significant. Together these findings suggest that emotional intelligence is related to the reasons why people listen to music but not in the way that previous research had suggested, and the apparent links between emotional intelligence and mood management might be better explained by the stress experienced by participants at the time of questioning.

Keywords:

Music; Uses of music; Emotional intelligence; Stress; Alexithymia;

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For many of us, music is an important part of our daily lives. People listen to music for a variety of different reasons: to manage and regulate their mood (North, Hargreaves & O'Neill, 2000; Lonsdale & North, 2011; Schäfer, Sedlmeier, Städtler & Huron, 2013; Schäfer & Sedlmeier, 2009); to construct, maintain or express their identity (Lonsdale & North, 2011; North et al., 2000; Schafer & Sedlmeier, 2009); to manipulate their state of arousal (Lonsdale & North, 2011); to interact and relate with others (Tarrant, North & Hargreaves, 2000); to reminisce about the past (Lonsdale & North, 2011); to serve as a distraction (Brown, Campbell & Fischer, 1986; Sun & Lull, 1986); or simply as a source of enjoyment (Laukka, 2007; Lonsdale & North, 2011). These reasons are also known to differ according to an individual's age, personality, cognitive ability and mood (e.g., Chamorro-Premuzic, Fagan & Furnham, 2010; Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic, Gomà-i-Freixanet, Furnham & Muro, 2009; Chamorro-Premuzic, Swami & Cermakova, 2012; Chamorro-Premuzic, Swami, Furnham & Maakip, 2009; Lonsdale & North, 2011; Vella & Mills, 2017; Wilhelm, Gillis, Schubert & Whittle, 2013).

Recent research suggests that people listen to music primarily to manage their moods (Lonsdale & North, 2011), so it is possible that individuals who are better at recognising and managing their emotions will use music differently than those who are less able to do so. Or, to put it another way, the way in which people use music may depend on their level of 'emotional intelligence'. In the time since it was first introduced and popularised (e.g., Gardner, 1983; Goleman, 1995), the term emotional intelligence (EI) has been conceptualised in a number of different ways. Initially, Salovey and Mayer (1990) put forward an 'ability model' that asserted EI is a form of intelligence distinct and independent from traditional cognitive notions of intelligence, concerned with the "ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions"

(Salovey & Mayer, 1990; p.189). However, a number of researchers have also subsequently asserted that EI might be better understood to encompass a range of behavioural dispositions and self-perceived abilities within a broader personality framework (Petrides & Furnham, 2001).

These two models are now commonly referred to as ‘ability EI’ and ‘trait EI’.

To date, there have been only two studies conducted to investigate the possible relationship between EI and people’s reasons for listening to music, both of which have used the same self-report measure of trait EI (Petrides, 2009). Chamorro-Premuzic, Fagan and Furnham (2010) found that trait EI scores were correlated negatively with the emotional use of music, whilst there were no significant relationships between trait EI and other uses of music (i.e., the use of music for ‘cognitive’ & ‘background’ purposes). As expected, this finding suggested that individuals with higher trait EI were less likely to use to music in-order to regulate their mood; this presumably reflects their greater capacity to identify and manage their own emotions without the need for music to help with this. However, this apparent link was later drawn in to question by a second similar study (Chamorro-Premuzic, Swami & Cermakova, 2012), which found no relationship between trait EI and uses of music. It is therefore clear that the evidence for a link between emotional intelligence and uses of music is both limited and inconclusive, and as such warrants further investigation.

Both studies on this topic (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010) had several limitations that may account for their inconclusive findings. For instance, both studies used the same abbreviated measure (i.e., the 15-item Uses of Music Inventory – Chamorro-Premuzic & Furnham, 2007) to assess the reasons why participants listened to music that was arguably too simplistic and ignored the full range and subtle complexity of their likely motives. For example, the three-factor solution simply refers to a non-specific ‘emotional use of music’ (Chamorro-Premuzic & Furnham, 2007), whereas a more recent eight-factor model of why people listen to music (Lonsdale & North, 2011) distinguishes between the management of

positive and negative moods. It is therefore asserted that a more comprehensive measure of people's motives is necessary in-order to understand the relationship between trait EI and people's reasons for listening to music with greater precision.

Both previous investigations also failed to control for the effects of participants' gender and age. There is evidence that men and women may listen to music for different reasons (Lonsdale & North, 2011; North, Hargreaves & O'Neill, 2000), and people's reasons for listening might change as they grow older (Lonsdale & North, 2011). Similarly, research has also consistently shown that females and older participants tend to be more emotionally intelligent than males and their younger participants (e.g., Van Rooy, Alonso & Viswesvaran, 2005), and it is entirely possible that these differences in EI are, to some extent, responsible for individual differences found in people's motives for listening to music. The failure to statistically control for the impact of these variables and the use of a disproportionately male sample (Chamorro-Premuzic et al., 2012) may, in part, explain the conflicting findings of previous investigations.

Finally, previous research on this subject might also be criticised for overlooking the potential role played by negative affect. When experiencing stress, emotionally intelligent individuals are more likely to adopt effective coping strategies (Noorbakhsha, Besharata & Zarei, 2010) and seek help from others (Ciarrochi & Deane, 2001); this tendency may explain the negative relationship found between EI and the emotional use of music (Chamorro-Premuzic et al, 2010). That is, emotionally intelligent individuals are perhaps less reliant on music as a means to cope with and alleviate negative feelings because of their more adaptive, problem-focussed response to stressful situations. However, this interpretation might be mistaken.

Research suggests that people who experience negative emotions (Getz, Chamorro-Premuzic, Roy & Devroop, 2012) or high levels of stress (Getz, Marks &, Roy, 2012; Vella & Mills, 2017) are more likely to use music to manage their mood. For this reason, it is entirely conceivable that emotionally intelligent individuals are less likely to use music to manage their

mood simply because they tend to experience lower levels of stress or negative affect. Put simply, it is possible that the apparent link between emotional intelligence and people's reasons for listening to music might itself depend on an individual's perceived stress at the time of questioning (i.e., if you are not stressed, lonely or depressed at the time of questioning why would you bother listening to regulate your emotions and / or relieve negative moods?). The study reported here therefore aimed to re-examine the possible relationship between an individual's reasons for listening to music and their trait emotional intelligence.

To address some of the limitations of previous research, the present study used an eight-factor measure (Lonsdale & North, 2011) to assess participants' reasons for listening to music. In addition to this, the present study statistically controlled for the effects of participant's gender, age and perceived stress in-order to determine if the relationship between emotional intelligence and uses of music (if found) is independent of their demographics and their psychological state at the time of questioning. Participants with high trait EI were expected to be less likely to use music for mood management than their less emotionally intelligent counterparts. In contrast, there were little grounds to predict how trait EI might be related to non-emotional uses of music (e.g., distraction, reminisce, arousal & personal identity). To assess these relationships, the present investigation employed the same measure of trait emotional intelligence as was used in the two previous studies on this topic (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010).

However, to focus exclusively on emotional intelligence arguably provides a somewhat limited and imbalanced picture. Previous research on this subject (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010) only investigated the *positive* end of the emotional regulation spectrum (and how it relates to participants' reasons for listening to music), without accounting for the possible influence of emotional deficits or disorders. Indeed, there are

individuals that are less able to understand, recognise and describe emotion: this absence of emotional awareness is known as ‘alexithymia’.

Alexithymia is most often considered a personality trait that refers to the inability to successfully recognise, describe and communicate feelings (Lumley, Neely & Burger, 2007). Individuals with alexithymia struggle with identifying, understanding and managing their emotions, and as such it is expected that they will be more likely to use music as a means to regulate their emotions. For this reason, the present study assessed alexithymia levels alongside participants’ trait emotional intelligence in order to offer a broader view of emotional regulation (i.e., both their emotional competencies & emotional deficits) and how it might be related to people’s reasons for listening to music. Given that alexithymia has previously been found to correlate negatively with trait EI (e.g., Austin, Saklofske & Egan, 2005), it was therefore expected that alexithymia scores would be positively related with the participants’ self-reported use of music for emotional purposes.

Method

Participants

One hundred and eighty one participants (118 females & 63 males) took part in the study voluntarily and were recruited using email invitations and online via posts on Facebook. Participants ranged from 18 to 82 years old, with a mean age of 35.43 years-old (SD = 19.64).

Measures

Participants were asked to complete an on-line questionnaire concerned with “why people listen to music”. The questionnaire was divided into five sections each concerned with a different aspect of the study:

Importance of music & music consumption

Participants were asked how important music is to them (0 = Not at all, 10 = Completely) and how often they listened to music, using a 6-point rating scale (0 = Never, 5 = Everyday). To estimate the number of hours spent listening to music over the course of an average week, participants were asked to indicate the number of hour they normally spend listening to music on: (1) an average weekday; (2) an average Saturday; and (3) an average Sunday.¹

Reasons for listening to music

A 48-item scale (Lonsdale & North, 2011) was used to assess the reasons why participants listen to music. Participants were asked to indicate the extent to which each reason (e.g. “to create an atmosphere”) accurately described their reasons for listening to music, using an 11-point rating scale (0 = Not at all, 10 = Completely). Previous research (Lonsdale & North, 2011) suggests that this scale can be divided into eight sub-scales each measuring a different reason for listening to music: (1) Personal identity (e.g., “to create an image for myself” - 11 items); (2) Negative mood management (e.g., “to relieve anxiety” - 10 items); (3) Positive mood management (e.g., “to brighten up my day” - 6 items); (4) Reminiscing (e.g., “to reminisce about the past” - 4 items); (5) Diversion (e.g., “to pass the time” - 6 items); (6) Arousal (e.g., “to give me energy” - 5 items); (7) Surveillance (e.g., “to stay in-touch with current fashion and trends” - 3 items); and (8) Social interaction (e.g., “to spend time with friends” - 3 items). Scores for each of the eight subscales were calculated as the mean of the relevant items (i.e., sub-scale scores range from 0 to 10). In the present study, all eight sub-scales were found to be internally consistent ($\alpha = .72$ to $.94$).

Stress

The perceived stress scale (PSS) (Cohen, Kamarck & Mermelstein, 1983) was used to assess the participant's perceived stress level over the previous month. The 14-item scale asked participants to indicate how often they have experienced certain thoughts and feelings in the past month (e.g., "In the last month, how often have you been upset about something that happened unexpectedly"), using a 5-point rating scale (0 = Never, 4 = Very often). Overall PSS scores were calculated as the sum of all 10 items, and as such ranged from 0 to 40. High PSS score indicated that a participant had felt highly stressed during the previous month. In the present study, the PSS was found to be internally consistent ($\alpha = .91$).

Emotional intelligence

The Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF – version 1.50) (Petrides, 2009) was used to assess participants' level of emotional intelligence. The 30-item scale asked participants to indicate the extent to which they agree or disagree with each of the statements (e.g., "I often find it difficult to see things from another person's viewpoint") using a 7-point rating scale (1 = Completely disagree, 7 = Completely agree). Overall TEIQue-SF scores were calculated as the sum of all 30 items, and as such ranged from 30 to 210. High TEIQue-SF scores indicated that a participant had a more developed emotional intelligence (i.e., was better skilled at recognising, expressing and regulating emotions). In the present study, the TEIQue-SF was found to be internally consistent ($\alpha = .91$).

Alexithymia

The Twenty-Item Toronto Alexithymia Scale (TAS-20) (Bagby, Parker & Taylor, 1994) was used to assess the extent to which participants may suffer from alexithymia. The 20-item scale asked participants to indicate the extent to which they agree or disagree with each of the statements (e.g., "I prefer just to let things happen rather than to understand why they turned out

that way”) using a 5-point rating scale (1 = Strongly disagree, 5 = Strongly agree). Overall TAS-20 scores were calculated as the sum of all 20 items, and as such ranged from 20 to 100. High TAS-20 scores indicated that a participant is likely to experience difficulty in recognising and describing feelings. In the present study, the TAS-20 was found to be internally consistent ($\alpha = .87$).

Results

Preliminary analysis

Initial analysis indicated that listening to music was important in participants’ everyday lives ($M = 7.17$, $SD = 2.08$). The majority of participants (57.46%) reported that they listened to music ‘every day’, 17.68% listened ‘nearly every day’, 13.81% listened ‘most days’ and 11.05% listened ‘sometimes’. Participants’ estimates also indicated they spent 19.52 hours ($SD = 13.73$) listening to music over the course of an average week.²

Overall scores for all eight reasons for listening to music were first examined to determine if certain motives were rated more highly than others. A repeated measures ANOVA showed that that mean scores on these eight scales differed significantly, $F(5.51, 991.50) = 212.34$, $p < 0.001$, $\eta^2_p = .54$. Table 1 shows the mean rating given to each of the eight sub-scales. Bonferroni adjusted post hoc tests showed that participants considered positive mood management to be the most important of the eight reasons for listening to music. The next three factors, negative mood management, arousal and reminiscing, were all found to be approximately equal in their importance. Finally, participants’ ratings indicated that surveillance and personal identity were both of similar, low importance.

- Table 1 about here -

A MANOVA was then used to investigate if male and female participants engaged with music differently and also if they listen to music for significantly different reasons. Measures of music's everyday importance, music consumption were used as dependent variables, together with participants' scores on each of the eight subscales. A significant difference was found ($F(11, 169) = 5.21, p < .001, \eta^2_p = .25$). Univariate analysis subsequently showed that females were more likely to report listening to music to manipulate their arousal (5.07 (SD = 2.44)), than males (4.23 (SD = 2.63)) ($F(1, 179) = 4.65, p = .03, \eta^2_p = .03$)⁴.

Main analysis

Pearson's r correlational analyses were conducted to establish the relationships between participants' trait emotional intelligence, alexithymia, perceived stress, and their reasons for listening to music. Table 2 shows that trait EI correlated negatively with self-reported alexithymia, stress, and positively with participant's age. Trait EI was also found to correlate negatively with the use of music for negative mood management, diversion and personal identity. Self-reported alexithymia was found to correlate positively with perceived stress and negatively with a participant's age. Alexithymia also correlated positively with the use of music for negative mood management, diversion and personal identity.

- Table 2 about here -

Partial correlations were subsequently conducted to successively control for the effects of participants' gender, age and perceived stress levels on their reasons for listening to music. Table 2 shows that, after statistically controlling for participants' gender, all the significant correlations previously found with trait EI and alexithymia remained significant. However, when

participants' gender and age were both controlled for, trait EI was also found to correlate positively with arousal and alexithymia no longer correlated significantly with diversion. Finally, third-order correlations showed that the previous negative correlations between trait EI, alexithymia and negative mood management, diversion and personal identity were no longer significant after controlling for participants' gender, age and their self-reported stress level. In contrast, the same third-order correlation showed that trait EI scores were positively related to both arousal and reminiscing, whilst alexithymia was negatively related to both arousal and reminiscing.

Eight hierarchical multiple regressions were then conducted to test the extent to which the investigated demographic and psychological variables might predict participants' reasons for listening to music. In each regression, participants' age and gender were used as predictors in the first stage of the hierarchical regression. In the second stage of the hierarchical regressions, participants' perceived stress score was added to the model. Finally, participants' trait EI was added to the model. Alexithymia was excluded from these regressions because of concerns about multicollinearity.

Table 3 shows that gender significantly predicted participants' reasons for listening to music at stage 1 (arousal & social interaction), stage 2 (arousal, social interaction & personal identity) and stage 3 (arousal & personal identity) of the hierarchical multiple regression. Similarly, participant's age was found to negatively predict scores on all eight uses of music at stage 1, all but one reason (diversion) at stages 2 and 3 of the hierarchical multiple regression. Perceived stress was found to significantly predict participants' reasons for listening to music at stage 2 (positive mood management, reminiscing, diversion & personal identity) and stage 3 (positive mood management, arousal, reminiscing & diversion) of the hierarchical multiple regression. Finally, the addition of trait EI in stage 3 of the hierarchical multiple regression was

only found to significantly predict the extent to which participants listen to music in-order to manipulate their arousal and to reminisce about the past.

- Table 3 about here -

Discussion

Whilst the results of the present investigation suggest trait emotional intelligence, alexithymia and the reasons why people listen to music are significantly related, the present findings indicate these relationships are not as straightforward as was expected. At first glance, the findings of the present study appear to indicate that trait emotional intelligence correlated negatively with listening to music to manage negative moods. This negative relationship between trait EI and the emotional use of music is consistent with earlier findings (Chamorro-Premuzic, Fagan & Furnham, 2010), and is in keeping with the idea that individuals who consider themselves good at identifying and managing their own emotions (and those of others) are perhaps less inclined to use music in order to regulate their mood. This idea is also further supported by the positive association found between alexithymia and negative mood management scores, this suggests that individuals who struggle to recognise, describe and communicate their feelings may be more likely to listen to music as a means to relieve and alleviate negative moods.

Although a comparison of mean ratings showed that participants listen to music primarily to manage / regulate their moods, there are a number of other reasons why people listen to music. Indeed, using an eight-factor model (Lonsdale & North, 2011), the present study also found that trait EI and alexithymia were both significantly related to the use of music as a distraction and as a means to express and / or define their identity. Given that previous studies on this subject (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010) employed a simpler three-

factor model of participants' motivations (i.e., emotional, cognitive & background), these correlations were not initially expected, but they certainly warrant further investigation. Together these findings suggest that reasons why people listen to music may differ significantly according to their self-rated ability to identify, understand and manage their own emotions.

These apparent associations between trait EI and participants' reasons for listening to music were, however, no longer found to be significant when the effects of participants' gender, age and perceived stress levels were all statistically controlled for; this finding was contrary to initial predictions and the findings of previous research on this subject (Chamorro-Premuzic, Fagan & Furnham, 2010). It therefore appears that the links initially found between emotional intelligence, alexithymia and reasons for listening to music (i.e. negative mood management, diversion & personal identity) might be better explained by the stress experienced by participants at the time of questioning (i.e., these correlations only became non-significant after the effects of perceived stress had been partialled out). Emotionally intelligent people tend to adopt more adaptive, problem-focussed coping strategies (Noorbakhsha, Besharata & Zarei, 2010), they experience less stress and have less intense physical reactions to stressful situations (Salovey, Stroud, Woolery & Epel, 2002); it is therefore entirely conceivable that these individuals are less likely to use music to manage negative moods because of their lower levels of stress rather than their ability to successfully identify and regulate their own emotions.

Perhaps most interestingly, the present findings also indicate that (when controlling for participants' gender, age and perceived stress level) emotionally intelligent individuals were more likely to report listening to music to reminisce about the past and to manipulate their level of arousal. Likewise, the same partial correlations showed that alexithymia scores were negatively associated with using music for the purposes of reminiscence and managing arousal. This particular pattern of associations between trait EI and participants' reasons for listening to music was further supported by the findings of the eight hierarchical multiple regressions. That is, trait

EI only served to significantly predict participants' scores on the reminiscing and arousal sub-scales and none of the other six reasons for listening to music (after the effects of their gender, age and perceived stress level had been accounted for). Although entirely unexpected, these present findings are intriguing and warrant further exploration.

The positive relationship between emotional intelligence and scores on the 'arousal' sub-scale indicated that emotionally intelligent individuals were more likely to report listening music in order to manipulate their level of arousal according to the demands of a situation (e.g., to wake up in the morning, to sleep at night). Our musical preferences and choices are often extremely context-specific (North & Hargreaves, 1996) and may depend on the nature of listening situation and the needs of the individual to polarise or moderate his / her level of arousal. Indeed, research has also shown that when faced with highly arousing situations individuals will often seek to moderate this by listening to less arousing music (Konečni, Crozier & Doob, 1976; Konečni & Sargent-Pollock, 1976), but equally there are also instances that when placed in high / low arousal situations people will listen to music that polarises their arousal still further (North & Hargreaves, 2000). Perhaps emotionally intelligent individuals are more aware of their current (and desired) state of arousal, more skilled at recognising music's potential to polarise (or moderate) their level of arousal, better understand the context dependent effects of music and are quicker to identify instances when polarisation (or moderation) is likely to optimise or impair performance on a given task or in a particular listening situation.

Emotional intelligence was also found to be a significant predictor of scores on the 'reminiscing' sub-scale, this suggested that participants with high levels of trait EI were more likely to report listening music to reminisce about the past. Although unexpected, this finding is not altogether surprising given recent research that suggests nostalgia and reminiscing about the past is likely to be an important psychological resource triggered in response to negative thoughts and emotions (Routledge, Wildschut, Sedikides & Juhl, 2013). Indeed, there is evidence

to suggest that engaging in nostalgia can lead to significant improvements in mood, increase feelings of social connectedness, enhance self-esteem and bolster perceptions of meaning in life (e.g., Routledge et al., 2011; Wildschut, Sedikides, Arndt & Routledge, 2006). Listening to music as a means to reminisce about the past might therefore be understood as an adaptive coping strategy that is likely to protect individuals from psychological threats (e.g., stress, anxiety & loneliness) and repair the mood of those experiencing negative affect or emotional distress. When viewed in this context, it is possible that emotionally intelligent individuals make greater use of the reminiscence functions served by music simply because they are better able to recognise the value of nostalgia as a resource to promote and maintain their psychological health and well-being. However, given the correlational nature of the study, it is also possible that using music to manipulate arousal and to reminisce about the past might help people to develop their emotional intelligence. In any case, these links warrant further investigation.

The present findings also serve to highlight the importance of controlling for confounding variables (age, gender & stress) when investigating peoples' reasons for listening to music, without this the present study would have arrived at very different conclusions. With this in mind, future investigations on this topic should look to take account of other variables that are known to be related to both emotional intelligence and why people listen to music. In this context, the effects of personality seem like an obvious candidate to control for. For example, research suggests that emotional intelligence and neuroticism are closely related (e.g., Dawda & Hart, 2000; Petrides, Pita, & Kokkinaki, 2007; Siegling, Furnham, & Petrides, 2015). Similarly, several studies have also found that neurotic individuals are more likely to use music to regulate their emotions (e.g., Chamorro-Premuzic, Fagan & Furnham, 2010; Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic, Gomà-i-Freixanet, Furnham & Muro, 2009; Chamorro-Premuzic, Swami & Cermakova, 2012; Chamorro-Premuzic, Swami, Furnham & Maakip, 2009). It would therefore be interesting to see if trait emotional intelligence still significantly predicted

participants' reasons for listening to music when neuroticism (together with age, gender & stress) has been controlled for. Several studies have shown that measures of trait emotional intelligence have incremental validity over and above established personality taxonomies (e.g., Brackett & Mayer, 2003; Petrides, Pérez-González & Furnham, 2007; Saklofske, Austin, & Minski, 2003; Siegling, Vesely, Petrides & Saklofske, 2015) in terms of predicting a variety of different psychological and behavioural outcomes, and as such there is every reason to suspect this may also be the case for people's reasons for listening to music.

Many of the present findings were not expected and also demonstrate the importance of employing a more comprehensive eight-factor measure (Lonsdale & North, 2011) to study people's reasons for listening to music. For example, significant correlations were found between trait EI and negative mood management whilst no correlations were found with scores on the positive mood management sub-scale, highlighting the subtle distinction between the two emotional uses of music. What's more, had a simpler three-factor model of participants' motivations (Chamarro-Premuzic & Furnham, 2007) been employed, the correlations found between trait EI, alexithymia and the use of music as a distraction and as a means to express and / or define their identity would not have been identified. Equally, the significant relationships found between trait EI and participants' scores on the reminiscing and arousal sub-scales would also have been missed using a three-factor model (i.e., emotional, cognitive & background). The reasons why people listen to music are not as simplistic as previous studies might indicate, and it is suggested that all future investigations on this topic should aim to reflect the full range of these motives.

Although the present findings offer new insights into the possible links between an individual's reasons for listening to music and their emotional intelligence, it would seem prudent for future studies to re-examine these relationships before more confident conclusions are drawn. However, the present study had a number of issues and limitations that should be

acknowledged before these apparent links are re-examined. Firstly, the perceived stress scale (Cohen, Kamarck & Mermelstein, 1983) asks participants to reflect on their thoughts and feelings over the previous month, yet no similar timeframe was used when they were asked to report their reasons for listening to music. Research has shown that the reasons why people listen to music and the means by which they listen to music are likely to vary significantly according to the time of day and even day of the week (Krause, North & Hewitt, 2014, 2015; North, Hargreaves & Hargreaves, 2004); it therefore seems odd to assume that an individual's self-reported motives for listening music will remain same as they were at the time of questioning. With this in mind, future investigations might be better served by assessing participants' reasons for listening to music in a way that reflects their recent use of music over specified / pre-set timeframe (e.g., "In the last month / week, why did you listen to music?") in order to correspond with other time-dependent measures (i.e., perceived stress experienced in the last month).

Like the two studies before it (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010), the present investigation used the TEIQue-SF to assess participants' self-reported level of trait emotional intelligence. Although the TEIQue-SF has the advantages of being relatively short (i.e., 30-items) and psychometrically robust (e.g., Cooper & Petrides, 2010; Laborde, Allen & Guillén, 2016), it is not the only way to measure trait emotional intelligence. Indeed, several other self-report measures have been developed over the past thirty years (e.g., SSRI, ECI, EQ-I & SREIS – see Brackett & Geher, 2006 for a brief overview), each of which is based on its own particular definition and theoretical perspective on emotional intelligence. Future investigations on this topic should therefore explore whether the present findings are unique to the TEIQue-SF or if these links are still evident when other measures of trait EI are used. There is, however, evidence that self-rated and performance measures of emotional intelligence are not closely related (e.g., Brackett & Mayer, 2003; Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006), this suggests that our self-perceived ability to perceive, use,

understand and manage their emotions (and those of others) is likely to be a poor indicator of our actual emotional abilities. For this reason, future studies might arguably be better served by employing performance measures of emotional intelligence (e.g., the MSCEIT - Mayer, Salovey, & Caruso, 2002) rather than the self-report trait EI measure used here.

In sum, the present findings support the idea that trait emotional intelligence, alexithymia and the reasons why people listen to music are significantly related. However, these relationships were found to be not as straightforward as was initially expected. In keeping with previous studies (Chamorro-Premuzic et al., 2012; Chamorro-Premuzic et al., 2010), significant correlations were found between measures of trait EI, alexithymia and using music to regulate negative moods. What's more, unexpected correlations were also found with regards to the use of music as a distraction and as a means to express and / or define their identity. These relationships were, however, no longer found to be significant when the effects of perceived stress (together with participants' sex & age) were controlled for, suggesting that stress experienced at the time of questioning rather than emotional intelligence was responsible for these apparent links. In contrast, trait EI scores were found to be positively related to listening to music for the purposes of arousal management and reminiscing about the past when the effects of participants' sex, age and stress were taken into account. Together these findings serve to highlight the importance of controlling for potentially confounding variables (in this case age, gender & stress) and the use of a more comprehensive measure when studying people's reasons for listening to music. Overall, the present findings indicate that individuals with high trait EI might use music in different ways to their less emotionally intelligent counterparts, but not in the ways we previously thought.

Ethical Approval

Ethical approval for this project was given by the Psychology Research Ethics Committee,

Oxford Brookes University [ref number 1415/080].

Notes:

- ¹ A weekly estimate was calculated by multiplying participants' weekday estimate by five and adding it together with their Saturday and Sunday estimates.
- ² Mean scores indicated that participants reported spending 2.80 hours (SD = 2.07) listening to music on an average weekday, 2.67 hours (SD = 2.18) on an average Saturday and 2.87 hours (SD = 2.42) on an average Sunday.
- ⁴ Please consult supplemental online material (Table 4) for further details on all of these gender comparisons.

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Table 1.

Mean rating for each of the eight reasons for listening to music

	Mean rating (<i>SD</i>)
Positive mood management	6.79 (1.85)
Negative mood management	5.19 (2.50)
Arousal	4.78 (2.53)
Reminiscing	4.77 (2.77)
Diversion	4.09 (2.35)
Social interaction	3.11 (2.47)
Surveillance	1.85 (1.91)
Personal identity	1.84 (1.95)

Table 2.

Bivariate & partial correlations (controlling for gender, age and stress) between emotional intelligence, alexithymia and participants' reasons for listening to music

	Alexithymia	Stress	Age	1	2	3	4	5	6	7	8
<u>Zero order correlations</u> (N = 181)											
Emotional intelligence	-.78**	-.71**	.39**	-.07	-.40**	-.09	-.13	-.35**	-.06	-.05	-.26**
Alexithymia	-	.52**	-.37**	.04	.33**	.10	.07	.33**	.03	.07	.26**
Stress	-	-	-.49**	.18*	.57**	.35**	.35**	.48**	.22*	.09	.29**
Age	-	-	-	-.31**	-.41**	-.53**	-.22*	-.61**	-.32**	-.17*	-.35**
<u>1st order correlations</u> (df = 178)											
Emotional intelligence	-.78**	-.72**	.39**	-.08	-.40**	-.09	-.13	-.35**	-.06	-.05	-.26**
Alexithymia	-	.54**	-.37**	.03	.33**	.10	.07	.33**	.04	.07	.26**
Stress	-	-	-.51**	.21*	.57**	.33**	.35**	.50**	.20*	.08	.33**
Age	-	-	-	-.31**	-.41**	-.55**	-.22*	-.61**	-.33**	-.18*	-.35**
<u>2nd order correlations</u> (df = 177)											
Emotional intelligence	-.74**	-.66**	-	.05	-.29**	.16*	-.05	-.16*	.08	.02	-.15*
Alexithymia	-	.44**	-	-.09	.21*	-.13	-.01	.14	-.09	.01	.16*
Stress	-	-	-	.06	.46**	.07	.29**	.28**	.04	-.01	.19*
<u>3rd order correlations</u> (df = 176)											
Emotional intelligence	-.67**	-	-	.11	.02	.28**	.19*	.03	.14	.02	-.03
Alexithymia	-	-	-	-.13	.01	-.18*	-.16*	.02	-.12	.02	.08

* $p < .05$; ** $p < .001$

Note:

1 = Positive mood management; 2 = Negative mood management; 3 = Arousal; 4 = Reminiscing; 5 = Diversion; 6 = Social interaction; 7 = Surveillance; 8 = Personal identity;

Table 3.
Hierarchical multiple regression analyses

Regression	1	2	3	4	5	6	7	8
<u>Stage 1</u>								
Gender	-.08	.10	.19**	.02	.02	.16*	.06	-.11
Age	-.31***	-.41***	-.54***	-.23**	-.61***	-.32***	-.18*	-.34***
<i>F</i> (2, 178)	10.34***	18.99***	42.02***	4.73*	52.07***	12.75***	3.08*	13.87***
Adjusted <i>r</i> ²	.09	.17	.31	.04	.36	.12	.02	.13
<u>Stage 2</u>								
Gender	-.09	-.02	.17**	-.05	-.04	.15*	.07	-.16*
Age	-.27**	-.17*	-.51***	-.06	-.48***	-.30***	-.18*	-.24**
Stress	.07	.49***	.07	-.33***	.26***	.04	-.01	.21*
<i>F</i> (3, 177)	7.11***	31.69***	28.33***	8.62***	42.20***	8.56***	2.05	11.68***
Adjusted <i>r</i> ²	.09	.34	.31	.11	.41	.11	.02	.15
<i>R</i> ² change	.00	.17***	.00	.08***	.05***	.00	.00	.03*
<u>Stage 3</u>								
Gender	-.11	-.02	.13*	-.08	-.04	.13	.06	-.16*
Age	-.28**	-.17*	-.52***	-.07	-.48***	-.31***	-.18*	-.24**
Stress	.19	.51***	.31**	.51***	.28**	.18	.01	.18
Emotional intelligence	.17	.02	.34***	.26*	.03	.19	.03	-.04
<i>F</i> (4, 176)	6.07***	23.66***	26.79***	8.31***	31.54***	7.41***	1.54	8.77***
Adjusted <i>r</i> ²	.10	.34	.36	.14	.40	.13	.01	.15
<i>R</i> ² change	.01	.00	.05***	.03*	.00	.02	.00	.00

* $p < .05$; ** $p < .01$; *** $p < .001$

Note:

1 = Positive mood management; 2 = Negative mood management; 3 = Arousal; 4 = Reminiscing; 5 = Diversion; 6 = Social interaction; 7 = Surveillance; 8 = Personal identity

Supplemental online material

Table 4.
Summary of univariate MANOVA analysis

	Males	Females	<i>F</i>
How important is music in your everyday life?	7.27 (2.27)	7.11 (1.98)	.24
How often do you listen to music?	4.40 (0.99)	4.12 (1.08)	2.88
Music consumption: Weekly estimate (hours)	19.60 (12.11)	19.47 (14.57)	.00
Positive mood management	7.03 (1.80)	6.67 (1.88)	1.61
Negative mood management	4.94 (2.63)	5.33 (2.42)	1.00
Arousal	4.23 (2.63)	5.07 (2.44)	4.65*
Reminiscing	4.73 (3.05)	4.79 (2.62)	.02
Diversion	4.13 (2.49)	4.07 (2.29)	.03
Social interaction	2.62 (2.50)	3.36 (2.42)	3.75
Surveillance	1.71 (2.05)	1.92 (1.83)	.49
Personal identity	2.19 (2.44)	1.66 (1.61)	3.15

* $p < .05$

df = 1,179 in all cases