Which emotions are communicated by music cross-culturally?

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WHICH EMOTIONS ARE COMMUNICATED BY MUSIC

CROSS-CULTURALLY?

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This thesis investigated which emotions are communicated by music cross-culturally. The research was conducted by means of a comprehensive literature review of empirical studies in music psychology. Ten studies published between 1996 and 2013 fulfilled the inclusion criteria. A number of findings emerged from the analysis of the reviewed literature. The review revealed that the definition of culture is explicitly or by default based on nationality. Further analysis led to the conclusion that using nationality is a simple way to categorise the people of a culture but is necessarily reductionist because it can exclude other culture-specific values. A re-analysis of the cultures based on nationality using Hofstede's cultural dimensions theory suggested new interpretations of the published data. For example, the re-analysis could explain cross-cultural difference when the decoding cultures investigated scored differently along the dimension "uncertainty avoidance" (intolerance towards uncertainty and ambiguity). On the other hand, it could explain no cross-cultural difference when the decoding cultures scored similarly along the same dimension of uncertainty avoidance. Anger variance between encoded and decoded emotion was regularly noted in the review. These data were examined using current theories in music psychology, but each theory failed to explain much of the variance observed. For example, none were able to explain the finding that anger expressed in Japanese music was poorly decoded by Indian, Japanese and Swedish listeners. Thus, by expanding the lens model of emotion communication as a framework, the stereotype theory of emotion in music (STEM) was proposed. According to STEM, listeners filter the emotion they perceive according to stereotypes of the encoding culture. For example, Japanese culture is stereotyped as an anger reticent culture, explaining the low anger ratings for their "anger-encoded" music. The thesis concluded that happiness and sadness are universally communicated; however, anger perception is culturally influenced through a stereotyping process. STEM predicts that anger *will* be perceived if the decoding culture has no stereotype attached to the encoding culture through psychophysical cues such as rhythm and timbre. STEM presents a new way forward in understanding the cognitive processing of emotion in music.

Which Emotions Are Communicated by Music Cross-Culturally?

Marco Susino

ORIGINALITY STATEMENT

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Signed Marco Susino Date 12th October 2015

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Abstract

This thesis investigated which emotions are communicated by music cross-culturally. The research was conducted by means of a comprehensive literature review of empirical studies in music psychology. Ten studies published between 1996 and 2013 fulfilled the inclusion criteria.

A number of findings emerged from the analysis of the reviewed literature. The review revealed that the definition of culture is explicitly or by default based on nationality. Further analysis led to the conclusion that using nationality is a simple way to categorise the people of a culture but is necessarily reductionist because it can exclude other culture-specific values. A re-analysis of the cultures based on nationality using Hofstede's cultural dimensions theory suggested new interpretations of the published data. For example, the re-analysis could explain cross-cultural difference when the decoding cultures investigated scored differently along the dimension "uncertainty avoidance" (intolerance towards uncertainty and ambiguity). On the other hand, it could explain no cross-cultural difference when the decoding cultures scored similarly along the same dimension of uncertainty avoidance.

Anger variance between encoded and decoded emotion was regularly noted in the review. These data were examined using current theories in music psychology, but each theory failed to explain much of the variance observed. For example, none were able to explain the finding that anger expressed in Japanese music was poorly decoded by Indian, Japanese and Swedish listeners. Thus, by expanding the lens model of emotion communication as a framework, the stereotype theory of emotion in music

(STEM) was proposed. According to STEM, listeners filter the emotion they perceive according to stereotypes of the encoding culture. For example, Japanese culture is stereotyped as an anger reticent culture, explaining the low anger ratings for their "anger-encoded" music. The thesis concluded that happiness and sadness are universally communicated; however, anger perception is culturally influenced through a stereotyping process. STEM predicts that anger *will* be perceived if the decoding culture has no stereotype attached to the encoding culture through psychophysical cues such as rhythm and timbre. STEM presents a new way forward in understanding the cognitive processing of emotion in music.

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Chapter 1 – The Universal–Culture-Specific Continuum

In a study of German music and culture, Applegate (1992) asserted "[m]usic is the universal language" (1992, p. 22). Popular belief attests to this universality. Considering the number of books, websites, album titles and poems that mention such or similar statements, it is widely held that the emotions music can communicate are cross-culturally shared and universally understood. However, how factual is this claim? Are *all* emotions in response to *all* music universally communicated? Are some emotions better communicated than others? Might it be that like language, music and, in particular, emotional responses to music are highly specific to culture? Or do emotional responses to music go beyond cultural boundaries? Recent research in music psychology has led to diverse conclusions, with scholars leaning toward different sides of the universal versus culture-specific continuum (for a review, see Higgins, 2012). The question is all the more fascinating when one considers that music is both universal (McDermott, 2008) and, by definition, a cultural artefact (Blacking, 1973; Higgins, 2014; Mead, 1973). This thesis will further investigate the popular claim that the emotions communicated in music are universally understood.

Many researchers (such as Adachi & Trehub, 2000; Balkwill & Thompson, 1999; Higgins, 2012; Juslin, 2012) acknowledge the role of culture in communicating emotion in music and the role of this communication appearing explicable by universal factors, independent of culture. Some firmly argue that cultural conventions and traditions dominate in musical communication and understanding (including Matsumoto, 1989; Matsumoto & Hwang, 2012; Mesquita, 2003; Mesquita & Boiger,

2014; Mesquita & Walker, 2003; Morrison & Demorest, 2009), and others propose that universal factors dominate in the communication of emotion and meaning in music (Lerdahl & Jackendoff, 1985; Mâche, 1992; Nettl, 2000, 1983; Wieczorkowska, Datta, Sengupta, Dey, & Mukherjee, 2010). This thesis aims to examine to what extent emotions are universally communicated by music and to what extent through culturally specific conventions and to critically evaluate the findings, particularly when they are contradictory or inconsistent.

Scholars who lean towards a universal explanation of emotion communication in music argue that musical features, such as pulse or timbre, account for emotional responses in all cultures (Nettl, 1983). In contrast, Meyer (1957) has suggested that "there appears to be [a] positive correlation between cultural distance…and cultural noise. That is, the more distant a culture is from our present set of habit responses, the greater the amount of cultural noise involved in communication" (p. 420). By cultural noise, Meyer refers to disparities between the emotional responses from listeners to their own culture's music and the emotional responses of individuals from another culture to the same music. Scholars supporting this view advocate that emotional responses to music are learnt from within a culture and that this therefore explains cross-cultural emotional variance (Cross, 2001; Matsumoto, Yoo, Nakagawa, & members of the Multinational Study of Cultural Display, 2008; Scherer, Wallbott, & Summerfield, 1986). In other words, the experience of a culture, cultural knowledge or enculturation, defined as "culture-specific cues" (Kwuon, 2009, p. 218), lead to diverse emotional interpretations (Becker, 2001). As Campbell (1997) writes, "[w]ithout enculturation or education, we simply cannot know fully the meaning of these 'other',

'foreign' musics. Thus, for every musical experience, there are the etic (outsider) and the emic (insider) perspectives on it" (p. 35).

1.1 The Aims of This Thesis

Apart from the research question suggested in the title of this thesis, the thesis has three aims. Firstly, to review the key literature on the cross-cultural communication of music and emotion; secondly, it aims to identify gaps and anomalous findings in the key studies reviewed and suggest possible explanations; and finally, it aims to investigate the way the effect of culture is measured in the cross-cultural study of emotion in music by applying theoretical perspectives in the psychology of culture.

1.2 Limitations/Delimitations

The topic of this thesis is of interest in several fields of research, including anthropology, cultural studies, ethnomusicology, film studies, social psychology and philosophy. However, this thesis will exclusively limit its focus to the empirical data in music psychology that involve a quantified, cross-cultural comparative approach. Despite research on the effects of culture being the domain of ethnomusicologists (Merriam, 1964; Nettl, 2000, 1983), in recent years the question of the cross-cultural communication of emotion in music has received increasing attention in music psychology. The sub-discipline of music psychology has grown significantly in the last four decades or so, and it has progressively become involved in areas of music research that were previously considered the domain of other sub-disciplines such as music education and musicology (Kertz-Welzel, 2008; Lee, Downie, & Cunningham, 2005). Furthermore, other sub-disciplines, such as the ones already mentioned, routinely adopt

qualitative approaches, allowing for greater flexibility and depth of enquiry but making comparisons between studies more difficult.

The span of music psychology studies reviewed in this thesis is limited to works published between 1996 and 2013. Whilst other publications in music psychology have provided discussions of cross-cultural emotion comparison and identified the importance of culture in emotion communication and music (see Adachi, Trehub, & Abe, 2004; Deva & Virmani, 1975; Konečni, 1984; Morrison & Demorest, 2009; Morrison, Demorest, & Stambaugh, 2008), Gregory's and Varney's (1996) paper was the first to systematically compare the emotional responses of two distinctive cultures and their music. For this reason, studies between and including 1996 to 2013 are reviewed. Further information about the literature reviewed is provided in Chapters 2 and 3.

1.3 Thesis Plan

Chapter 2 of this thesis will provide an overview and a tabulated summary of the existing literature that has informed research on the cross-cultural communication of emotion in music. Chapter 3 presents an extensive review of each study and a summary of the key findings drawn from the literature. In Chapter 4, "culture" as it appears in the reviewed literature is examined. Chapter 5 investigates the anomalous finding of cross-cultural variance in the perception of anger. This stereotype theory of emotion in music (STEM) is introduced. Chapter 6 offers a summation of the findings from the literature reviewed and outlines recommendations for how cross-cultural studies of emotion in

music may move forward while dealing with the various anomalies and inconsistencies

identified by this research.

Chapter 2 – Overview of the Literature on Cross-Cultural Studies of Music and Emotion

This chapter tabulates the emotional responses gathered from 14 cultures, as presented by the authors of a series of 10 studies published between 1996 and 2013, inclusive. Each of these studies compared cross-cultural emotion communication in response to music. An overview of the data collected is outlined in the proceeding sections, with comprehensive details of each study outlined in Chapter 3.

2.1 Criteria for Inclusion of Studies and Delimitations

Four inclusion criteria were considered for studies in the present review. First, only studies that made a direct comparison between one or more alleged cultural group's responses to music from a diverse culture or cultures were included, such as western[1] listeners' responses to Japanese traditional music or western and Indian listeners' responses to Western and Indian Classical music. Hence, studies that focused on emotional response to music in general (for example, Barrett, Mesquita, Ochsner, & Gross, 2007; Baumgartner, Esslen, & Jäncke, 2006; Eerola & Vuoskoski, 2011) were not included in this review. Second, only comparative studies in music psychology which demonstrated a quantifiable result were considered. Therefore, investigations examining the music or the culture of participants from an aesthetics, a philosophical or a qualitative ethno-musicological perspective were not included in the reviewed studies. Third, only studies that focused on discrete and measurable emotions (for example,

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[1] As per Fowler's Modern English Usage, this thesis will use a capital initial (*Western*) when forming part of a recognised noun (for example, *Western Classical music*), whereas a lowercase initial (*western*) will be used when denoting regional and cultural association (such as '*western music*'; Allen, 2008).

happiness) and emotion-related words (for example, ardent, intense, soulful) were reported. Finally the review comprised only studies published in peer-reviewed journals[2] (as discussed in Chapter 1, Section 1.2). Ten studies met all four-inclusion criteria.

2.2 Search Strategy

The studies included were gathered using the following Internet-based databases: Google Scholar, PsycINFO, Répertoire International de Littérature Musicale (RILM), Scopus and Web of Knowledge. Locating articles that fulfilled the inclusion criteria was done through online keyword searching. Keywords were combined: "Cross-cultural music" was combined with "emotions", "emotional states", "emotional responses" and "higher cognitive states".

2.3 Summary of Methods Used

2.3.1 Method.
Table 1 provides a summary of the 10 studies included in this review, showing the following: author/s and publication year; aims of the study; emotions, semantics and states investigated; psychophysical cues [3] investigated; response alternatives, experimental design and procedures; adjective options, response format by decoders (for example, bi-polar rating scale 1–9, where 1 = emotion not perceived and 9 = emotion strongly perceived);

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[2] Wieczorkowska et al. (2010) was published as a book chapter, but it is not clear what the peer-reviewing process was. Nevertheless it was included in the list of studies to be reviewed.
[3] Psychophysical cues refer to "any property of sound that can be perceived independent of musical experience, knowledge, or enculturation. For example, speed of pulse, or tempo" (Balkwill & Thompson, 1999, p. 44).

Table 1 – Tabulated literature review studies.

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
1. Balkwill and Thompson (1999)	(V) "[Investigate if] listeners should be able to transcend cultural boundaries and recognise intended emotions in the music from an unfamiliar tonal system" Empirically test the cue-redundancy model for the representation and recognition of emotion in music	• Anger • Joy • Peace • Sadness X	• Melodic complexity • Pitch Range • Rhythmic complexity • Tempo	{4} • Individual testing • Each listener identified 1 dominant emotion and rated all 4 emotions, as well as all 4 P. cues	BR (0-9)	(V) "Indicate which of the four target emotion was most dominant" C	IND 12 HR excerpts	30 CND 4 HR Experts	15 F 15 M 23-46 years No MT	• (V) "Raised in a western culture and exposed to music of the western tonal system" • Experts on HR who either taught or studied Hindustani music	• WST listeners sensitive to intended emotion in HR, even though unfamiliar with the tonal system • Listeners' ratings relied only on the P.cues which were predictive of their judgment

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
2. Balkwill et al. (2004)	(V) "Provide additional evidence for the cue-redundancy model"	• Anger • Joy • Sadness X	• Complexity • Loudness • Tempo	{3} • Each listener rated 1 emotion and 1 P. cue from 1of the 3 genres	BR (0-9)	(V) "Judge the intensity of one emotion" C	IND JP WST 10 JT excerpts 10 HR excerpts 10 W IMPRO excerpts	147 JP	76 F 71 M M = 23.7years 25.3% No MT 23.3% <5 years 51.4% >5 years	• Born in Japan • Cited Japanese as first language • Musical training • Familiarity with music • Musical preference	• (V) "emotional meaning in music is conveyed by acoustic cues, and interpretation …does not require familiarity with culture-specific musical conventions"
3. Fritz et al. (2009)	*Experiment 1*: (V) "Investigate the recognition of musical emotion in two groups: Mafa listeners…and western listeners"	• Happy • Sad • Scared/ Fearful X	• Mode • Pitch range • Rhythmic regularity • Tempo • Tone density	{3} • Individual testing • Each participant listened to CG piano excerpts and had to decide which emotion expression depicted in 3 picture faces best "fitted" the music	MFC (1/3)	(V) "Decide which of three faces from the Ekman archive (depicting emotional expressions corresponding to those in the music) fit[] best with the perceived music stimulus" E	Mafa WST 42 CG piano excerpts	20 Mafa 21 WST	18 F 23 M Mafa M = 62.3 years WST M = 52.4 years No MT	• Mafa participants from (V) "an area culturally isolated [from western cultural influences], and have never been exposed to Western music" • WST participants not familiar with African music	• Mafa participants recognised the emotion intent in WST music • (V) "These basic emotions in western music can be recognised universally"

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training[i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
	Experiment 2: (V) "Examine how a spectral manipulation of original, naturalistic music affects the perceived pleasantness of music in Western as well as in Mafa listeners"	• Pleasantness • Unpleasantnes s	-	{1} • Individual testing • Listeners identified which stimulus was more pleasant or unpleasant	Continuou s scale with a slider interface	(V) "Participants rated how pleasant or unpleasant they perceived Western music and its counterparts"	10 Mafa ritual music excerpts 14 Joyful WST dance music excerpts and their spectrally manipulated counterparts	22 Mafa 20 WST	18 F 24 M Mafa *M* = 56 years WST *M* = 52.9 years No MT	As per *Experiment 1*	• (V) "[B]oth Mafa and Western listeners perceived original music as being more pleasant than spectrally manipulated versions"
4. Fritz et al. (2013)	*Experiment 1*: (V) "Address whether western music can convey meaning universally due to iconic sign quality of extra-musical meaning in non-emotional expressions"	•Arrival •Bird •Bull •Celebration •Dance •Farewell •Fire •Fight •Flight •Glass •Hero •Hope •King •Longing •Loneliness •Men •Mockery •Morning •Needle •Peace •Poison •Prayer •Quarrel •Race •Rain •Storm •Strait •Stream •Sun •Threat •Water •Women •Wideness X	-	{3} • Individual testing • Each participant listened to an excerpt and had to decide which 1 of 3 nouns best "fitted" the music	MFC (1/3)	(V) "After each presentation of a musical excerpt, three nouns were presented of which the participants had to choose the one they thought best fit the musical piece" E	Mafa WST 33 WST instrumenta l dance music excerpts	25 Mafa 20 WST	23 F 22 M *M* = 55 years No MT	• WST participants not familiar with African music	• Mafa's association of nouns was strongly informed by enculturation

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
	Experiment 2: (V) "[examine] the aversion to a temporal disruption of Western music by playing it backwards"		-	{1} • Individual testing • Listeners identified which stimulus was more pleasant or unpleasant	Continuous scale with a slider interface	(V) "[Participants] rated [] the perceived Western music and its reversed versions"	WST 14 WST instrumental dance music excerpts	12 Mafa	2 F 10 M *M* = 57.1 years No MT	As per *Experiment 1*	• Original music was rated as more pleasant than spectrally manipulated
5. Gregory and Varney (1996)	• (V) "[Compare cross-cultural intended] adjectives to describe the mood of the excerpts" • (V) "Identify the correct Title of the New Age excerpts and to identify the seasons denoted by musical excerpts portraying different seasons of the year"	• Happy, Playful • Fanciful, • Light Delicate, Graceful • Dreamy, Tranquil • Plaintive, • Lonely • Sacred, Spiritual • Dramatic, Majestic • Frustrating, Irritating • Sad, Serious • Eerie, Grotesque	_	{10} • Hevner's (1936) checklist • Group testing • Participants choose 1 or more adjectives from a list to describe the "emotional feeling" of 31 musical stimuli	MFC (n/10)	(V) "Listeners were asked to tick one or more of a list of adjectives to describe the emotional feelings aroused by the music" C	IND WST WC excerpts HR excerpts New Age excerpts	31 IND 59 WST	50 F 40 M 18-25 years _	• Indian cultural background: (V) "extensive community of familiar from the Indian sub-continent who maintain their cultural traditions, including music in the home"	• Composer's intended emotion is generally not perceived • Cultural differences present, but of a "complex" nature

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
6. Hoshino (1996)	(V) "Discover…whether there is a difference in emotional reactions to many musical modes in existence in Japan"	• Anxious •Bright •Calm •Cheerful •Cold •Cute •Countrified •Dark •Gentle •Japanese And Old-Fashioned •Joyous •Limpid •Melancholy •Mysterious •Noble •Old •Ponderous •Refreshing •Rural •Sad •Soft •Strained •Vague •Warm X	_	{2} • Individual testing • Participants listened to a melody and decided which *colour* best "fitted"' the melody and wrote down verbal associations for each colour	NFC	(V) "After you have heard a melody look over the table of colours and choose the one colour which seems most nearly to fit that melody. As the feeling for melody differ for different people, there is no one correct answer. Please choose the appropriate colour to suit your feelings" C	JP WST 20 WC & JT CG excerpts	66 JP	66 F[ii] *M* = 51 42 No MT 24 Yes MT	• Musical knowledge • Formal training in music • Enculturated to Japanese traditional music and acculturated to WC music	• Both musical cultures were capable to arise emotional reactions but WST modes were better than JP modes • Different emotional reactions between the two musical cultures • Generational difference and difference in the emotional character was observed for musicians and non-musicians

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
7. Kwuon (2009)	(V) "Investigate the contribution of…cultural conventions in the assignment of emotional meaning to musical stimulus through cross-cultural comparison"	• Anger • Happiness • Sadness	_	{3} • Individual testing • Each listener rated each of the 3 emotions for all stimuli	BR (0-9)	(V) "[Listeners] Ma[d]e judgements on three emotions they believed the performance seemed to express, not on the emotions the music might elicit in the listener" E	KRN KRN Folk	62 AMR 50 KRN	75 F 42 M *Young* *M* = 23.1 years *Older* *M* = 73.2[iii] years No MT	• KRN participants who never lived outside of Korea • AMR participants raised in the US • Non-music majors or professionals	• Expressive music can communicate emotion through both P.cues and C.cues
8. Laukka et al. (2013)	(V) "[Investigate] if emotions and related states can be communicated through music within and across different musical cultures"	• Affection • Anger • Fear • Happiness • Humour • Longing • Peacefulness • Sadness • Solemnity • Spirituality • Neutral X	• Dynamics • Register • Rhythm • Structure • Timbre • Tonality	{11} • Individual testing • Participants chose 1 emotion/expressive state that best "fitted" the music	MFC (1/11)	(V) "Choose, from among the 11 intended expressions, one label that best represented the expression conveyed by each musical excerpt" E	IND JP WST HR JT WC SWD Folk	30 IND 27 JP 30 SWD	43 F 44 M *M* = 24.5 years _	• 12 professional musicians from 4 distinct musical cultures • Native participants • Familiarity of musical style	• Expressive intentions could be recognised within and across cultures, but more accurate for culturally familiar vs. culturally unfamiliar music

Study	Aim/s	Emotions, States and/or Semantics Investigated (In Terms Used By Authors)	P. Cues Investigated	Answer Alternatives, Experimental Design & Procedures	Response Format By Decoders	Instructions To Participants & Emotion Loci	Encoder Musical Culture/s & Music Stimuli	Number of Decoders & Decoding Culture/s	Age (Years), Sex & Musical Training [i]	Definition & Data Collected Purported To Be About Culture	Main Findings (Presented By Authors)
9. Wieczorkowska et al. (2010)	(V) "Identifying significant emotions…in western listeners as well as native Indian listeners and the cross-cultural differences, if any"	• Anger • Anxiety • Devotion • Heroic • Joy • Romantic • Serenity • Sorrow X	_	{8} _	MFC (n/8)	(V) "Assign each excerpt to only one emotional category if possible" C	IND 44 *alap* segments from 11 vocal Indian *Raga*s	12 IND 24 WST	_	• WST listeners and native IND listeners musical cultures	• (V) "culture does not play any significant differentiating role in the perception of emotion in music"
10. Zacharopoulou and Kyriakidou (2009)	(V) "Pinpoint cultural similarities and differences in the perception of emotion in music"	• Anger • Brightness • Fear • Grace • Happiness • Melancholy • Power • Relaxation • Sadness • Tenderness	• Harmonic complexity • Pitch level • Tempo • Range • Rapid changes of loudness • Rapid changes of tempo • Rhythmic clarity • Rhythmic complexity • Variation of loudness • Variation of tempo	{10} • Group testing • Participants rated each emotion for every excerpt • Music experts rated each structural element for every excerpt	BR (1-5)	(V) "Rate on a five-point scale the degree to which they believed that the provided emotions …were conveyed to them. It was noted that they should not focus on the emotions they were feeling, but on the emotions communicated by the performers" E	GRK 10 GRK traditional vocal excerpts	15 BRT 14 ITL 31 GRK 5 GRK music experts	M = 32.7 years _	• Age • Gender • Nationality • Previous musical training • Familiarity with Greek music	• (V) "listeners from different cultural backgrounds …were quite successful in decoding the intended emotions as identified by the Greeks" • Familiar and unfamiliar listeners relied on different musical structures to decode the intended emotion

Note.   A dash (-) indicates that no information was identified; { } = Answer Alternatives; AMR = American; BR = Bipolar Rating Scale; BRT= British; C = Could not be determined; CND = Canadian; C.cues = Cultural cues; CG = Computer generated; E = Expressed; GRK = Greek; HR = Hindustani *Raga*s; IMPRO = Improvisations; IND = Indian; ITN= Italian; JP = Japanese; JT = Japanese traditional; KRN = Korean; MFC = Multiple-forced choice; MT = Musical Training; n = Number not specified; NFC = Non-forced choice measure; P.cues = Psychophysical cues; SWD = Swedish; UGS = Undergraduate students; (V) = Verbatim; WST = western; WC = Western Classical; X = Coded into music.

[i] In terms of participants training
[ii] 44 UGS, 22 Elder participants
[iii] Young = 40F, 26M; Older = 35F, 16M

instructions to participants and emotion loci;[11] encoder musical culture (i.e. music of a culture) and music stimuli; decoder culture and number of participants; sex, age and musical training of participants; definition and data purported to be about culture and, finally, main findings. The particular details of each study are presented in Chapter 3

2.3.2 Participants and cultures investigated.

Fourteen different cultures are represented in the studies reviewed. Eight out of the 10 studies reviewed focused on an east–west distinction so that the difference in emotion communication in response to music was between a western (for example, Canadian) culture and an eastern (for example, Japanese) culture. Two studies focused on the distinction between western and African cultures. The number of participants investigated per study ranged from 30 to 147. Participants ranged in age from 18 to 80 years. A total number of 719 participants was investigated, of which 366 were female and 252 were male. Two studies did not report the gender of 101 participants (Wieczorkowska et al., 2010; Zacharopoulou & Kyriakidou, 2009). All but one of the remaining studies (Hoshino, 1996) investigated a mixed-gender sample. Eight studies investigated the responses of western listeners, three studies investigated those of Japanese listeners, three of Indian listeners, two of Mafa listeners and one of Korean listeners. Two studies investigated the emotional response of three distinct cultures, while five of the studies reviewed investigated two cultures. Three studies investigated only one culture response to music of a different culture . These studies compared Canadian listeners' emotional responses to Hindustani *Raga*s and Japanese listeners'

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[11] The identification of emotion perceived or emotion felt (Schubert, 2013).

emotional responses to either Hindustani *Ragas* and/or Western Classical music. Two studies analysed participants with formal musical training (presumably training as understood from a western cultural perspective), such as instrument training from a private teacher, school, university or conservatorium, while the rest analysed participants with no such training.

2.3.3 Apparatus and emotions investigated.
Four of the studies adopted bipolar rating scales, five adopted a multiple forced-choice measure and one study used a non-forced choice measure. The number of emotions studied in each study ranged from 3 to 10 ($M = 4.9$). Basic emotions were frequently investigated,[4] with *happy/happiness/joy* and *sad/sadness/sorrow* investigated in all 10 studies. The second most frequently investigated emotion (found in six studies) was anger.

2.3.4 Stimuli.
While the majority of the studies recruited professional musicians from distinct musical cultures (for example, Japanese traditional music) and instructed them to express particular emotions (for example, fear) on their specific instrument, others relied on pre-recorded or computer-generated music. A total of eight music traditions were investigated. The most common musical traditions used as stimuli were Western Classical music (five studies),[5] Hindustani music (five studies) and Japanese traditional music (three studies).

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[4] The studies that applied basic emotions consisted of a selection of emotions labeled as anger, fear, happiness and sadness, commonly reported as being basic (for further discussion, see Ekman, 1992).
[5] Classical music refers to music of the common practice era, spanning the Baroque, Classical and Romantic periods in western culture.

2.3.5 Procedures.

For the majority of the studies, participants were given a sheet of paper, which collected demographic data. The items, in order of frequency, included the following: nationality; age; sex; first language; musical training; familiarity with the type of music the researchers used as stimuli in the experiments; familiarity with the culture or cultures being investigated (for example, western listeners' familiarity with Mafa culture) and whether participants had ever lived or travelled outside their country of residence.

The participants listened to the stimuli and were asked to (1) choose an emotion or adjectives provided by the researcher or researchers to identify the emotive content of the music or (2) recognise the emotion that fitted a facial expression from a set of facial expression photos, as provided by the researchers. In Hoshino (1996), listeners chose one colour from a list of colours provided by the researcher that best fitted the emotional content of the music as per the listeners' judgment. Ratings were assigned on a scale ranging from 0 to 9, 1 to 9, 1 to 7 or 1 to 5, on which the rating of zero or 1 indicated that the emotional quality was not "felt", "perceived" or "recognised". Similarly, ratings were obtained through similar scales for the studies that observed the correlation between certain emotions and psychophysical cues of the music stimuli. The psychophysical cues investigated typically included complexity (harmonic, melodic and rhythmic), pitch range and tempo. Responses were hand written for all except two studies, which reported through the use of a computer interface (Fritz, Schmude, Jentschke, Friederici, & Koelsch, 2013; Fritz et al., 2009). All experiments were completed individually and not as part of a group. The following chapter presents a critical, detailed analysis of the selected studies.

Chapter 3 – Literature Review on the Study of Culture and Emotional Responses to Music

This chapter reports on the individual studies selected for the literature review, which were summarised in Chapter 2. The sections are presented according to the cultures investigated. Finally, the emergent issues concerning universality and culture specificity of emotion communication in music are identified and summarised.

3.1 Western and Indian culture

3.1.1 Westerners' and Indians' emotional responses to Indian, western and New Age music.

Gregory and Varney (1996) investigated the emotional content of Western Classical music, Hindustani *Ragas* and New Age music. They recruited 59 listeners (34 females, 25 males) from a western musical background and 31 listeners (16 females, 15 males) from an Indian cultural background. The researchers did not provide a definition of how they identified the participants' culture but distinguished the two cultural groups based on "cultural traditions". As Gregory and Varney indicated, Indian participants came "from an extensive community of families, from the Indian sub-continent who maintain their cultural traditions, including music in the home, but have been exposed to western music at school and when watching television" (p. 47). What the researchers did specify is that both groups of participants lived and studied in England. Gregory and Varney remarked, "cultural traditions related to music are strong enough to predict interesting differences" (p. 48). Each participant was asked to choose one or more adjectives from a list of 10 adjectival groups to describe the "emotional feeling" of 31 musical stimuli. The stimuli consisted of Western Classical, Hindustani *Ragas* and New

Age music. The list of adjectives presented to the participants was a modified version of Hevner's (1936) adjective checklist. The researchers inferred an adjectival group based on the title of the composition and the composer's or musician's musical notations (such as, *allegro*, with the adjectival group *happy, playful*) for Western Classical and New Age music excerpts. For Hindustani *Ragas*, they did so by comparing emotional descriptions given by Daniélou (1980), which examined the same Hindustani *Ragas*. Participants were asked to tick one or more adjectives to describe their emotional responses to the music. It is unclear from the procedures described in the article whether the participants' responses described their felt or perceived emotion from the music.

Spearman's rank correlation coefficient was calculated to measure the agreement between western and Indian participants on the order of choice of the 10 adjectival groups for each excerpt. Significant correlations were noted between western and Indian listeners for Western Classical music r_s (88) = .76, p < .01 and r_s (88) = .77 and p < .01 for New Age music but not as high for Hindustani *Ragas* r_s (88) = .65 p < .01. A more detailed comparison for each excerpt between the two culturally distinct groups revealed some significant differences. For example, while the majority of western listeners paired "Vivaldi, Seasons, Spring, 2nd movement" with the adjective group "plaintive, lonely", the majority of Indian listeners chose the adjective group "eerie, grotesque". Gregory and Varney concluded that the composer's intended emotion is frequently not perceived in the music and that culture, although of a "complex nature", affects emotional responses to music. Interestingly, although not reported in Table 3 of the paper (p. 50), an inspection of the count indicates the adjective group "dreamy, tranquil" was the most frequently reported for the emotion

recognised, followed by the "happy, playful" group. However, the adjective group "plaintive, lonely" presumably intended by the composers to be associated with the "Albinoni, Adagio" and "Ravi Shankar, *Maru Bihag*" were the least recognised.

3.1.2 Westerners' and Indians' emotional response to Indian music.

Wieczorkowska et al. (2010) investigated the cross-cultural emotional responses evoked by Hindustani music of western as well as "native Indian listeners". The aim of the study consisted of "identifying significant emotions evoked by…segments in western listeners as well as native Indian listeners and the cross-cultural differences, if any" (p. 285). By cross-cultural difference, the researchers imply differences in nationality, as no other data concerning culture is reported in the study.[6] The researchers used 44, 30-second-long vocal stimuli with some accompaniment, extracted from 11 *ragas*. Twenty-four western and 12 native Indians (sex not reported) were asked to assign one of eight emotions to each excerpt, reported by the authors as including anger, anxiety, devotion, heroic, joy, romantic, serenity and sorrow. It is unclear in the publication whether the emotion locus to be reported by the participants was "felt" or "perceived". Listeners were asked to assign only one emotion to each stimulus if possible; however, two choices were allowed, although the first and second choice had to be ordered and marked by the listener – for example, first choice "anger", second choice "joy". However, only the first choice, as ordered and marked by the listener, was taken into consideration by the researchers for the purpose of analysis. Interestingly, Martinez (2001) provided a comprehensive guide of emotions associated in different *ragas* and identified that some *ragas* included in the Wieczorkowska et al. (2010) study

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[6] In the "opinion score sheet" knowledge of music was also asked of participants, but those data were not reported.

were not necessarily associated with only one emotion. For example, while *raga Bhairav* is generally associated with the *rasas* (emotions) peace and serenity, Wieczorkowska and her colleagues nominated the target emotions of *Bhairav* as peace, serenity, anger and sorrow. Thus, listeners had four in eight chances (50%) of identifying the intended emotion in the *raga* by chance. In addition, the study did not mention whether the participants, particularly the native Indian listeners, were familiar with the *ragas*.

T-tests calculated between the obtained count and expected count of each emotion label for all participants revealed no effect of culture (at *p* = .05); answers by the participants showed no statistically significant difference between the two culturally diverse groups of listeners. Wieczorkowska et al. (2010) concluded, "culture does not play any significant role in the perception of emotion in music" (p. 298). However, it is important to note that this study is characterised by some unusual analytic procedures that may restrict its interpretability. The study unusually applied a t-test using frequency counts as the dependent variable, rather than mean responses along a continuous scales. In addition, the specific p values, means and standard deviations of the dependent variable between the two groups were not reported.

3.1.3 Westerners' and Indians' emotional responses to Indian music.

Balkwill and Thompson (1999) engaged two Hindustani musicians and asked them to choose *ragas* they would normally perform to convey the following four emotions: anger, joy, peace and sadness. The musicians were asked to play only a short *alap* (improvisation section) from each *raga*. The researchers selected three *alaps* for each target emotion. Four Hindustani music experts, engaged by the researchers, further

verified the intended emotion in these improvisation sections. As per the study conducted by Gregory and Varney (1996), Balkwill and Thompson did not "deny the influence of culture on individuals' judgments of emotion in music" (p. 44) or of "culture-specific knowledge regarding the conventional associations of emotion and music" (p. 58). However, no clear definition of culture was reported, and it appears the researchers based cultural difference on the participants' unfamiliarity with the musical cultures found in India.

Balkwill and Thompson asked 30 Canadian participants (15 females, 15 males), and four Hindustani music experts to identify the dominant perceived emotion in each of 12 excerpts and rate it on a 9-point rating scale (1 = emotion not conveyed through to 9 = emotion conveyed). The 12 excerpts consisted of music being performed on a *bansuri* flute or a stringed instrument, being a *sitar*, a *dilruba* or a *surbahar*, all instruments associated with cultures found in India. The participants were "raised in a western culture and exposed to music of the [w]estern tonal system" (p. 50). The Hindustani experts had either taught or studied Hindustani music for an average of 33 years. Apart from identifying and rating the dominant emotion in each *alap*, the listeners were also asked to rate the presence of the other three emotions. Finally, the listeners rated four psychophysical cues on a bipolar rating scale, these being melodic complexity, pitch range, rhythmic complexity and tempo. Balkwill and Thompson explain that culture-specific cues[7] are cues familiar to the music of a particular culture and therefore form part of the process by which listeners learn their meaning through

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[7] "Cultural cues" and "culture-specific cues" are often interchanged in the reviewed literature, appearing to refer a single meaning. For consistency, this thesis will use only "culture-specific cues" to denote either.

enculturation or acculturation. For example, a perfect cadence in western music generally denotes the end of a phrase.

The correlations between the mean ratings of all pairings of the four target emotions revealed negative relationships between two pairs, the first being joy and sadness and the second, anger and peace. A comparison between mean ratings of the two cultural groups (i.e. Canadian listeners and Hindustani experts) indicated that both assigned "similar" ratings for all four emotions. That is, joy and sadness were perceived as opposing emotions, as were anger and peace. The mean ratings of each target emotion revealed that listeners recognised joy (M = 5.61, SEM = .41) for music intended (by the musicians) to be joyful and sad (M = 5.27, SEM= .39) for stimuli intended (by the musicians) to be sad. However, overall mean ratings of anger to stimuli intended to express anger were statistically significant but relatively low (M = 3.37, SEM = .46) when compared to joyful and sadness ratings, a similarity also observed in Wieczorkowska et al. (2010). Similarly, participants' ratings of peace for stimuli intended to express peace (M = 4.61, SEM = .48) were also relatively lower than the other emotions investigated. Balkwill and Thompson (1999) concluded that western listeners were capable of perceiving the intended emotion in music from culturally unfamiliar music through the psychophysical cues investigated: melodic complexity; pitch range; rhythmic complexity and tempo. As a result, they constructed the cue-redundancy model (Figure 1), a model of perception of emotion in music that differentiates between universal psychophysical cues and culture-specific cues. This model will be discussed in detail in Chapter 5. Balkwill and Thompson asserted that "[w]hen familiar cultural cues are absent, the listener must pay more attention to basic

perceptual cues, such as tempo and complexity. These cues allow the listener to gain a general understanding of the intended emotion" (p. 45). That is, emotional perception in music is possible by means of psychophysical cues and culture-specific cues yet can be also recognised based on musical features should culture-specific cues be absent. Thus, listeners familiar with Brazilian Samba music, for example, perceive emotion from a combination of the rhythms, melodies, pitch and tempo of the music and their enculturation with Samba and its use in the cultures found in Brazil. However, listeners not acculturated with this culture or Samba may regardless perceive "a general understanding", as Balkwill and Thompson write, of the emotions the music is trying to portray via the rhythmic, melodic, pitch and tempo cues, because some auditory cues are shared by all music.

Figure 1 – The cue-redundancy model.
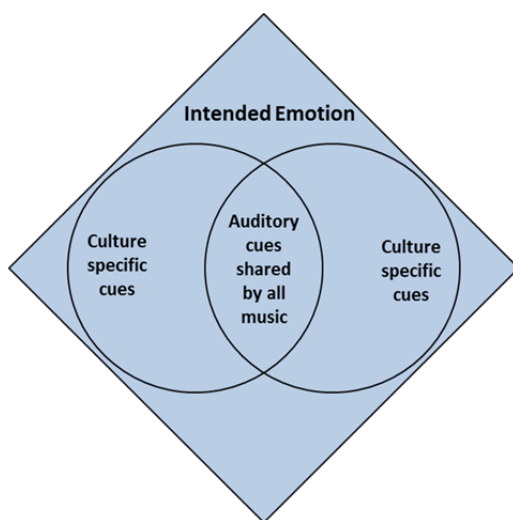
Reproduced from "A Cross-Cultural Investigation of the Perception of Emotion in Music: Psychophysical and Cultural Cues", by Balkwill and Thompson (1999), *Music Perception, 17***(1), 34-64.**

3.1.4 Westerners' emotional responses to traditional Greek music.

Zacharopoulou and Kyriakidou (2009) further investigated the cue-redundancy model by examining the ratings made by Greek, English and Italian participants of Greek traditional, vocal music excerpts. The researchers appear to determine cultural difference between the participants according to their nationality, as per the following: 14 Italians, 15 British and 31 Greek listeners.[8] The participants rated 10 excerpts on a 5-point rating scale (1 = not at all to 5 = very much) the degree to which they perceived the music communicated 10 emotions. The emotions presented to the participants included anger, brightness, fear, grace, happiness, melancholy, power, relaxation, sadness and tenderness. A questionnaire distributed to the participants gathered information on gender, age, nationality, previous musical training and familiarity with Greek music. However, only nationality was used for statistical analysis.

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[8] Gender of participants was not reported.

Zacharopoulou and Kyriakidou used the responses of the majority of Greek participants to establish the "correct" intended emotion. That is, intended emotion perceived was based on the average response of Greek participants to Greek music. Furthermore, if a participant (including Greek) gave the intended emotion answer, the researchers explained, the score was incremented by the percentage of Greek participants who perceived the same emotion. "For example, if 56% of Greek individuals…said that there is a moderate amount of happiness in a particular musical excerpt, then an individual participant's score (British, Italian or Greek) was incremented by 0.56 if she or he gave that particular response" (p. 5). However, not all the percentage adjustments were explicitly reported in the paper. The researchers' selection of music was based on that proposed by Byzantine archimandrite Chrysanthos (1832/1976-1977), who gave specific "emotional" descriptive adjectives for each of the stimuli used. These adjectives included authoritative, modest, penetrates the soul and serious.

The findings for the total mean ratings of emotions were shown on a bar graph, and while some of these mean ratings were reported (see Table 2 in Zacharopoulou and Kyriakidou, p. 11), some others were not. Therefore, for some of the emotions, no exact mean rating was specified and no standard deviations or standard errors for each emotion rating were reported. However, a visual comparison using a bar graph (shown in Figure 1, p. 6 of that publication) illustrated that British listeners' mean ratings of emotion judgment were higher than those of Greek listeners and that Italian listeners' ratings were always the lowest amongst the three groups. A table illustrating the mean

of the three most dominant emotions selected from both Greek and non-Greek listeners (combined) for each stimulus showed some similarities and some differences. For example, from the mean ratings reported in Table 2 of the publication, excerpt 1 produced similar judgments of melancholy ($M = 3.97$ and $M = 4.00$ for the Greek group and the non-Greek group, respectively), sadness ($M = 3.25$ and $M = 3.72$ for the Greek group and the non-Greek group, respectively) and tenderness ($M = 2.94$ and $M = 2.97$ for the Greek group and the non-Greek group, respectively). However, excerpt 6 revealed power ($M = 2.94$ and $M = 3.66$ for the Greek group and the non-Greek group, respectively) as the only agreed emotion between the two groups out of 5 reported emotions. The other four reported emotions in the same excerpt were grace *(M = 2.90 non-Greek)*, happiness *(M = 2.86 non-Greek)*, sadness *(M = 3.19 Greek)* and melancholy *(M = 2.87 Greek)*. In other words, the emotional perception of Greek and non-Greek listeners for some excerpts differed. Sadness and happiness were consistently perceived across cultures with one exception (excerpt 6), in which Greek listeners perceived sadness ($M = 3.19$) and non-Greek listeners perceived happiness ($M = 2.86$).

A second experiment examined the correlation between emotions most recognised and the psychophysical cues of the music including tempo and rhythmic complexity as per Balkwill's and Thompson's 1999 study (for a full list refer to Table 1, row 10, column 4 under the heading "Psychophysical Cues investigated"). Results indicated many differences between the ratings of the three cultural groups, suggesting that the three different cultural groups relied on different psychophysical cues to interpret the emotional meaning of the stimuli. In light of this, the researchers concluded that listeners from different cultural backgrounds were "quite successful in decoding the

intended emotions" (p. 12) and that culturally familiar and culturally unfamiliar listeners relied on different psychophysical cues and culture-specific cues, in accordance with the cue-redundancy model proposed by Balkwill and Thompson (1999).

3.2 Western and Korean cultures

3.2.1 Westerners' and Koreans' emotional experiences in response to Korean Folk music.

Kwuon (2009) investigated the effects of psychophysical cues – such as timing, tempo and articulation – and the culture-specific cues that are learnt by "immersion in a culture" (p. 219). The study measured the emotion perception of American and Korean participants in response to Korean music. Additionally, age was also investigated as a potential influence over participants' emotional perception.

In line with Gregory and Varney (1996), who argued for cultural differences within the same country, Kwuon proposed that cultural influence may be observed in the same nation within generational differences, because it is "not confined within geographical regions and…different age group cohorts may influence the participant's ability to recognise the emotional meaning in music" (p. 220). By analysing Korean Folk music, 35 young (17 females, 18 males) and 25 older (14 females, 11 males) Korean and 28 young (23 females, 5 males) and 26 older (21 females, 5 males) American participants rated the perception of anger, happiness and sadness. Two professional Korean musicians were engaged to embed these emotions within the musical stimuli. Six stimuli were created, which consisted of three versions (one per emotion) of two Korean Folk songs, played on a Korean traditional stringed instrument.

On a 10-point rating scale (0 = minimum expression to 9 = maximum expression), the participants were asked to rate the emotion and intensity for each stimulus. The procedures given to the participants clearly indicated to the participants that their judgment was meant to be on the emotion they believed the performance expressed, rather than what emotion the music might have elicited (p. 227).

As per Kwuon's analysis, the results of a 3 (nationality, age and emotional expressions) x 6 (music stimuli) analysis of variance (ANOVA) test indicated no significant difference between Korean and American listeners for ratings of happiness and sadness of the music. However, a significant difference was reported for anger. In response to *Jindo Arirang*, Korean listeners (*M* = 2.48, *SD* 2.96) rated anger intensity significantly lower than American listeners (*M* = 5.65, *SD* 2.80), with a split-plot ANOVA for which the intensity rating of the intended emotion was the dependent variable and emotional expression the independent variable *F(1, 105)* = 32.38, *p* <.001, = .236, for all stimuli. Furthermore, a difference between means for anger ratings in the second folk song (*Tapongga*) were noted between young (*M* = 5.72, *SD* 3.27) and older (*M* = 2.44, *SD 3.08*) Koreans. ANOVA tests indicated that this difference also included an interaction between the independent variables "age x emotional expression" *F*(2,96) = 7.888, *p* = .001, depending upon which emotion was being rated. However, no interaction was found for the independent variables "nationality x emotional expression" that could explain the emotion ratings. Kwuon concluded that both culturally diverse groups (i.e. Americans and Koreans) recognised the emotional content of the music at an above-chance level. In concert with Balkwill and Thompson, the author concluded that "[w]hile there appear to be certain features that might be

constructed as a universal code, the cultural conventions in which the listener has experienced growing up also contribute important information about the intended emotional meaning [in music]" (p. 235). Two important corollaries emerge from Kwuon's empirical evidence. One is that happiness and sadness have again been cross-culturally perceived, while complications appear when anger is communicated. The second is that nationality might not be the only reflection of cultural difference, but others such as generational difference might also play a significant role in cross-cultural emotion communication in music. Thus, cultural difference may be observed within the same nation. This latter matter is discussed further in Chapter 4.

3.3 Japanese culture

3.3.1 Japanese emotional responses to Japanese traditional and Western Classical music.

The studies discussed thus far engaged non-musicians to give emotional ratings of the musical stimuli. Hoshino (1996) hypothesised that significant differences might be observed between musically trained and non-musically trained participants when rating emotional responses to cross-cultural and culturally familiar music. Three groups of female-only Japanese participants were recruited for this study, including non-musical young participants, musically trained young participants and non-musically trained older participants. Hoshino asked the participants to associate 20 computer-generated music stimuli with one or more of 41 words,[9] such as "joyous" and "sad". The locus of emotion to be reported was not explicitly specified in the publication. Additionally, Hoshino asked the listeners to write down any "emotions" (p. 37) and

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[9] For a full list refer to Table 1, row 6, column 3.

associate these to a colour from a table of colours that represented what the listeners'
wrote. For example, the emotion "angry" was correlated with the colour red. The
stimuli consisted of major and minor modes in Western Classical music and their
Japanese equivalent: *YOH-sempô,* the Japanese major mode and *IN-sempô,* the Japanese
minor mode.

The table of colours adopted for this experiment was developed by Obonai and
Matsuoka (1956) as a measure of emotional responses to stimulus words. Each colour
could be classified in one of four categories, being "warm" colours (orange, pink,
yellowish red, reddish purple), "cold" colours (blue, blueish green, blueish purple),
"neutral" colours (green, yellowish green, purple, dark reddish purple, dark brown) and
"achromatic" colours (white, grey, black). According to Hoshino, each category could
be related to other "sensitivities or feelings" (p. 37). For example, warm colours, which
"give[…] a warm temperature impression" (p. 37) can be related to the emotion happy.

The results indicated that several of the same colours, including "bluish green",
"yellowish green" and "orange", were associated with both Western and Japanese major
modes. For example, 75.8% of the colours associated to the labels "bright", "calm" or
"joyous" were identified in both the Western major and the *YOH-sempô* mode. The
authors did not report which colour was specifically associated with an emotion.
However, Western major/minor modes gave much clearer emotional contrasts than did
the Japanese modes, such as "bright, joyous" (major) as opposed to "dark, sad" (minor).
Additionally, only a few words were commonly associated with a colour for both young
and older groups for the Japanese modes, such as "bright" and "warm", yet many more

overlapped in Western major and minor modes. Finally, a common colour index was calculated to determine what percentage of colours were common to each pair of modes. For example, "bluish green" gained 16% of the responses for western major and the *YOH-sempô* mode. Differences could be observed between young musicians and young non-musically trained listeners, such as the index for common colours in the *YOH-sempô* mode: 36.2% and 74.7% for young musicians and young non-musicians, respectively.[10] Hoshino concluded that the variables "age" and "musical training" affected the way listeners perceived modal character in two diverse musical cultures, and thus culture affects the communication of emotion in music. Hoshino's study results emphasise further the possibility that different emotional responses may be found within listeners self-identifying as the same nationality, such as Japanese or, as brought to attention earlier (Kwuon, 2009), Korean.

3.3.2 Japanese emotional responses to Japanese traditional, western and Hindustani music.

Balkwill, Thompson, and Matsunaga (2004) also investigated the emotion perception of Japanese listeners with various degrees of musical training. Two experiments were conducted using western, Japanese and Hindustani music. Experiment 1 measured the ratings of emotions within and across culturally specific music. Experiment 2 measured the ratings of psychophysical cues in the music – namely complexity, loudness and tempo – to examine whether excerpts intended to be angry, joyful and sad would be recognised through specific psychophysical cues. The researchers hypothesised that psychophysical cues transcend cultural boundaries (p. 343).

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[10] Standard deviation and inferential statistics were not reported.

In experiment 1, 147 (76 females, 71 males) "young" participants, all born in Japan and citing Japanese as their first language, were asked to rate, on a 10-point rating scale (0 = emotion not communicated to 9 = emotion clearly communicated), their perception of anger, joy and sadness in response to the music they heard. No definition of culture is provided in the publication, but it is assumed the scholars adopted nationality and first language as a definition of culture. Professionals were instructed to play music that specifically evoked the emotions anger, joy and sadness. Listeners were divided into three groups, one for each musical culture (Japanese traditional, Hindustani *Ragas* and western improvisation), and each group was further divided into three smaller groups, one for each emotion (anger, joy, sadness) that they rated. The analyses of a questionnaire handed to the participants just after their listening experiments revealed that 41% of participants were familiar with Japanese traditional music, 36% with western improvisation and only 6% with Hindustani *Ragas*. Surprisingly, Balkwill and associates' results were different from those of Hoshino (1996).

The results of a 3 (emotions) x 3 (musical cultures) ANOVA indicated that participants were able to decode the intended emotional meaning – anger, joy and sadness – in all three musical cultures. Significant interaction was noted between intended emotion and music culture for the ratings of anger, $F(2,92) = 16.661$, $p < 0.0001$, $eta^2 = 0.799$; joy, $F(2,96) = 389.916$, $p < 0.0001$, $eta^2 = 0.890$; and sadness, $F(2,88) = 214.655$, $p < 0.0001$, $eta^2 = 0.830$. These interactions implied that sensitivity to emotional communication in music depended on the culture with which the music was associated and partially by the listener's experience of the culture. The researchers

suggested that a listener's sensitivity to certain emotions depends on the culture the music represents and partially on the knowledge the listener holds of that culture (p. 343). In other words, through universally shared auditory cues, some musical cultures will communicate certain emotions better than others, and the extent of this decoding is partially affected by the experience of a listener of that culture. These indications are discussed further in Chapter 5. Balkwill and colleagues concluded that Japanese listeners were nevertheless sensitive to all three music genres and, unlike Hoshino (1996), the researchers suggested that musical training (or lack thereof) of the participants does not alter the emotional communication in response to music. To conclude, they argued that "emotional meaning in music is conveyed by acoustic cues, and interpretation of these cues does not require familiarity with culture-specific musical conventions" (pp. 346-347). The account in this study suggests that the universal auditory cues described in the cue-redundancy model are the conductors of emotion perception in music. However, they are also somewhat probabilistic (Juslin & Lindström, 2010), considering that the musical culture accounted for an interplay on the emotional judgment of the participants.

3.4 Westerners', Indians' and Japanese emotional responses to Japanese traditional, Indian, Western Classical and Swedish Folk music

In a study on the perception of "affective expression" in response to music, Laukka, Eerola, Thingujam, Yamasaki, and Beller (2013) investigated both basic emotions and "non-basic affective states". Based on Matsumoto's and Hwang's (2011) premise, they defined non-basic affective states as "states with some sort of affective valence but…not sufficient evidence to consider them…emotions" (p. 4). Laukka and

colleagues argued for "cultural conventions in the assignment of emotional meaning to [a] musical stimulus" as "the expressiveness of one's culture's music" (p. 1). In other words, music is a cultural artefact and thus reflects the emotional expression of the culture that composes and performs it. For example, Japanese traditional Folk music is a representation of the way Japanese culture expresses emotions. This representation will be further discussed in Chapter 5.

Twelve professional musicians from distinct musical cultures – Hindustani Classical music; Japanese traditional music; Swedish Folk music and Western Classical music – were requested to perform (in their respective musical cultures) 11 different emotions and related states, chosen by the researchers. These were affection, anger, fear, happiness, humour, longing, peacefulness, sadness, solemnity, spirituality and "neutral". A gender balanced recruitment of 30 Swedish, 30 Indian and 27 (13 female, 14 male) Japanese participants were asked to select the perceived emotion from a list of 11. Responses were deemed "correct" by the authors if the participants' perceived expressions were the same as the expressions intended by the professional musicians. An in-group advantage was reported because participants recognised the intended emotions better from music of their culture than music from other cultures.

With further analysis, Laukka et al. (2013) established that the emotions and affective states in Western Classical music were decoded with greater accuracy (i.e. identified as per the performers' intended emotion) ($M = 0.31$, where accuracy score is a ratio of number correct with respect to total) than Swedish Folk ($M = 0.24$) and Indian Hindustani music ($M = 0.22$), while Japanese music was decoded with least accuracy

(M = 0.18). These results are congruent with Hoshino's study, in which Western Classical music appeared to convey emotions more clearly than Japanese traditional music. Similarly, recognition rates varied across expressions, with *anger, fear, sadness* and *happiness* being better recognised than all other expressive states. However, a closer look at the mean recognition accuracy rates reveals that while happiness and sadness were somewhat better recognised in all musical cultures, anger and fear were best perceived in Western Classical and Hindustani music. For example, the results for the perception of anger in Western Classical music are overall reliable (recognition accuracy was 51% for Indian listeners, 46% for Japanese listeners and 57% for Swedish listeners).[12] And this also occurred for Hindustani music (recognition accuracy was 62% for Indian listeners, 47% for Japanese listeners and 46% for Swedish listeners).[13] However, while still statistically significant, the perception of anger in Japanese traditional music (recognition accuracy = 26% Indian listeners, 22% Japanese listeners 21% Swedish listeners)[14] or Swedish Folk music (recognition accuracy = 11% Indian listeners, 25% Japanese listeners 28% Swedish listeners)[15] was significantly poorer compared to the other two musical cultures.

The researchers' hypothesis of an overall in-group advantage was generally supported as certain trends of recognition were identified amongst in-group participants. For example, Swedish listeners expressed higher recognition for *fear* and *longing* in Swedish Folk music intended to communicate the same emotions. Laukka and

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[12] Chance level = 20%, *p* <.05
[13] Chance level = 20%, *p* <.05
[14] Chance level = 20%, *p* < .05 for Indian listeners and 9.09%, *p* < .05 for Japanese and Swedish listeners (Bonferroni corrected).
[15] Chance level = 9.09%, *p* < .05 for Japanese and Swedish listeners (Bonferroni corrected).

collaborators concluded that their results supported cross-cultural differences in the perception of emotion in music. They argued that while listeners from a culture were sensitive to the affective content of culturally unfamiliar music, the understanding of this content was not as clear as for content within culturally familiar music. Therefore, they argued that knowledge of a culture affects the perception of emotions in certain music representing that same culture.

Fritz et al. (2009) criticised cross-cultural studies in music and emotion that do not adequately take into consideration the possibility of exposure to cultural difference through implicit learning. As Fritz et al. critiqued: "[e]ven individuals from non-[W]estern cultures who have only listened to [W]estern music occasionally, and perhaps without paying explicit attention to it (e.g. while listening to the radio or watching a movie), do not qualify as participants because musical knowledge is usually acquired implicitly and is thus even shaped through inattentive listening experience" (p. 573).

3.5 Mafa's and Westerners' Emotional Responses to Western Classical and Mafa Music

Fritz et al. (2009) investigated the emotional responses of Mafa and western listeners to computer-generated piano excerpts in one experiment and how Mafa listeners perceived spectrally manipulated music in a second experiment. The Mafa people live in the Mandara mountains of North Cameroon. This study refuted the position that cross-cultural studies can be conducted in places where more than one culture coexists or where a culture has been exposed to cultural knowledge other than their own. Fritz and co-workers emphasised the need for participants to be "completely"

naïve to the excerpts being rated and "culturally isolated" from one another (p. 574). As the authors state, "Mafa settlements do not have electrical supply and are still inhabited by many individuals who pursue a traditional lifestyle and have never been exposed to Western music" (p. 573). In the first experiment, the researchers examined three basic emotions expressed in western music as understood in western culture, these being happy, sad and scared/fearful.

A gender-balanced recruitment of 21 Mafa listeners (8 females, 13 males) and 20 western listeners (10 females, 10 males) with similar age range formed the groups of the study. The listeners were asked to choose an emotion that best fitted with the music they heard by selecting one of three facial expressions, as featured in photographs provided by the researchers. Each photograph intended to depict one emotional expression, being happy, sad or scared/fearful. The results of a multivariate analysis of variance (MANOVA) with within-subject factor emotional expression (happy vs. sad vs. scared/fearful) and between-subject factor group (Mafa vs. western) revealed a main effect of emotional expression, ($F(2,39) = 15.48$, $p < 0.001$), again suggesting that emotional meaning in western music can be perceived cross-culturally. Music intended to convey happiness was more easily recognised than excerpts proposed to convey fear ($F(1,40) = 24.52$, $p < 0.001$) and sadness ($F(1,40) = 12.55$, $p < 0.001$) by both cultural groups. However, a main effect of group ($F(1,40) = 117.83$, $p < 0.001$) indicated western listeners as having higher recognition ratings than Mafa listeners.

The second experiment investigated whether Mafa listeners would perceive consonant music as more pleasant than spectrally manipulated and reversed (i.e. played-

backward) music. Twenty-two Mafa listeners (18 females, 4 males) rated how pleasant or unpleasant they perceived western music to be, and 21 other Mafa listeners (11 females, 10 males) employed the same ratings for Mafa music. Additionally, 20 western listeners rated the pleasantness of both western and Mafa music. The Mafa stimuli included ritual music, while the western stimuli used were "joyful instrumental dance music from the past four centuries" (p. 575). The listeners indicated their appreciation or dislike on a continuous scale with a slider interface. The results reported on a line graph indicated that all three groups perceived consonant music as being more pleasant for both musical styles. Combining the two results, Fritz et al. concluded that firstly, the three basic emotions investigated can be recognised "universally", and secondly, "consonance and permanent sensory dissonance universally influence the perceived pleasantness of music" (p. 573).

In a later study Fritz et al. (2013) asked 12 Mafa listeners (2 females, 10 males) to rate the pleasantness/unpleasantness of 14 western music stimuli, as reported in the Fritz et al. (2009) study. The stimuli included manipulated music, in which the excerpts were played backwards, which in total with the original, non-manipulated stimuli produced 28 excerpts. Once again, results of an ANOVA with the participant groups and direction of music (backward, forward) revealed that forward-playing music was rated as more pleasant than backwards music for both cultural groups.

The following chapters will critically engage with the problems of defining culture and the variance of cross-cultural perception of anger in music. A possible solution for the coding of culture in music and emotion studies will be the focus of the

next chapter. Following, Chapter 5 will aim to explain the variance of cross-cultural anger perception as a response to music.

3.6 Summary

Based on the foregoing review:

- In sum, two papers lean towards the universal communication of emotion in music, four papers towards the culture-specific side and four papers support a balance of both.

- Of the eight musical cultures reported in the literature reviewed, Western Classical music appears to be the best musical culture to communicate emotion, regardless of the culture decoding the emotion.

- Nine studies investigated the emotions happiness and sadness, and in all musical cultures these emotions appear to be cross-culturally communicated in response to music.

- Five studies did not explicitly report whether they investigated the perception or experience of emotion, while the remaining five reported emotion perceived.

- While generational-difference (Hoshino, 1996; Kwuon, 2009) and systematic eradication of implicit and explicit knowledge of the encoding culture and music (Fritz et al., 2013; Fritz et al., 2009) was taken into consideration in some studies, all but one paper (Gregory & Varney,

1996) appeared to define culture as nationality, either explicitly or by default.

- In comparison to the perception of happiness and sadness for music intended to convey the same emotions, communication of anger in different musical cultures is not decoded reliably.

Chapter 4 – Defining Culture

The literature reviewed in Chapter 3 revealed that researchers interested in culture and emotion in response to music have focused primarily on nationality. While knowledge of the encoding culture or music was occasionally observed in some studies, nationality was the only data reported in all the studies that purported to engage with culture and emotion. This chapter proposes the question: Does nationality sufficiently define culture? Chapter 4 reviews cross-cultural theories on key definitions of culture, with particular emphasis on studies that have measured emotional responses. An analysis of the relationship between nationality and culture is then clarified and refined. The chapter concludes by presenting a revised way of understanding culture in cross-cultural emotional responses to music, which allows for cultural influences beyond nationality and is informed by existing empirical data.

4.1 Defining Culture

The literature was reviewed with the aim of understanding to what extent emotions are communicated universally and to what extent they are communicated through culturally specific conventions. However, none of the studies gave an explicit, generally agreed upon definition of culture. Instead, treating nationality as a measure of culture was seen overall as a tacit proxy for culture, an assumption that was never scrutinised or tested in the literature reviewed (see Table 1, column 11). Diverse emotional responses were noted for listeners of the same nationality within the same country in two studies, thus raising the questions of what culture is and whether nationality is an adequate way to code culture. The first question is difficult to answer,

given that it depends on the focus and level of analysis. According to Valsiner (2012), "[c]ulture is in some sense a magic word – positive in connotations but hard to pinpoint in any science that attempts to use it as its core term" (p. 3). In fact, over 60 years ago, Kroeber and Kluckhohn (1952) identified 164 different definitions for the term "culture". For psychologists, as LeVine (1984) explains, "[c]ulture is often treated…as representing the unexplained residuum of rigorous empirical analysis, an area of darkness beyond the reach of currently available scientific searchlights" (p. 67). Yet, over the past two decades, many psychologists have called for more attention to this definition (for example Barrett et al., 2007; Betancourt & Lopez, 1993; Mesquita, 2003; Segall, Lonner, & Berry, 1998).

Triandis (2007, pp. 64-65) acknowledged the many definitions and characteristics of culture and thus defined it as "[a] pattern of shared attitudes, beliefs, categorizations, self-definitions, norms, role definitions, and values that is organized around a theme that can be identified among those who speak a particular language, during a specific historic period, and in a definable geographic region" (1996, p. 408). On the contrary, recent studies in social psychology have steered away from this view, advocating that culture and nationality are two relative but mutually exclusive concepts (Hewling, 2005; Pérez Jr, 2012; Triandis, 1995). Segall et al. (1998) advocated that "as national societies become increasingly diverse and international contacts become common, psychology can no longer assume an acultural or a unicultural stance" (p. 1101).

Cohen (2009) has argued that the definition given by Triandis is still bound to national-culture and distinguishes only people sharing the same country and speaking

the same language. For example, a Muslim born, raised and living in Bricklane, an English student studying at Goldsmith University and an Afro-Caribbean food stall market seller in Notting Hill share the same country of residence (England) and speak a mutual language (English) yet may differ in their attitudes, beliefs, categorisations, self-definitions, norms, role definitions and values. Instead, Cohen (2009) suggested that "psychologists [should] explore more kinds of variation among more kinds of cultures" (p. 194). Cohen explains that such variations are socially constructed, such as schemas, practices, competencies and ideas. Similarly, Misra and Gergen (1993) argued that culture is a "social construction", born out of social interactions, such as religion, music and socio-economic status, while Mesquita and Boiger (2014) emphasised that culture determines the expressions of emotion. From this perspective, as many forms of culture exist as there are societies, thus making social constructions the creator of culture and cultural variations. Hence, many cultures may exist even within the same geographical region.[16]

4.2 Implications for National-Culture

According to Vonk (2012), nationality is a legal relationship between an individual and a country. As Dahbour (2002) highlights, this relationship is far more political than cultural, a view supported by Gilbert (2007), Gilbert and Preston (2003) and Gilbert (1998), the latter having described nationality as "unavoidably *political*" (p. 11). Poole (2004) also defines nationality as a mix between personal and political identity rather than culture.

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[16] And many cultures may spill over more then one country (Higgins, 2012, p. 281), for example, individuals abiding to Islamic State ideologies.

In sum, these arguments infer that while nationality is a status given to an individual by a governing state for entitling rights and obligations created by the same state, it is not an accurate representation of an individual's schemas, practices, competencies and ideas, which current thinking suggests are more important determinants of culture. Rather, it is a generalisation. A person may belong to one or more nationalities but not necessarily to the culture/s of these nations. For example, while many Italian expatriates living in Australia may politically be identified as Australians, their cultural identity may be Italian.

Straub, Loch, Evaristo, Karahanna, and Srite (2002) reflect that "to generalize cultural characteristics across an entire nation of people is to flirt dangerously with…'ecological fallacy'" (p. 67). Hence, national-culture, as this thesis shall refer to cultures identified by their nationality, restricts the interpretation of cultural differences to what Matsumoto (1989) identified as anecdotal and impressionistic (p. 93). In contrast, the majority of the studies reviewed in this thesis have not demonstrated "true" cultural difference or sameness for emotional responses to music. Instead, these studies provide empirical evidence of national variance or invariance. As Shao, Doucet, and Caruso (2015, p. 243) stated, "nation [is] an imperfect indicator of culture".

4.3 Implications for Studies Adopting a National Coding of Culture

With the exception of Gregory and Varney (1996), who took into consideration cultural traditions related to the music of Indian and English listeners living in the same

nation (England), as well as Hoshino (1996) and Kwuon (2009), who observed generational differences for both Japanese and Korean listeners respectively, all the reviewed studies failed to take into account any socially acquired influences. And these three exception studies revealed such influences might alter emotion perception in response to music and provide important clues to cultural differences or similarities. Research in emotion communication and music must consider the change to customs when different cultures meet (acculturation) yet not completely exclude the acquirements of first-learning culture (enculturation) regardless of the country of residence. For example, it is very common to assume that all cultures will demonstrate the universal characteristic of listening to music to improve mood; yet we know that in some cultures like those found in Indigenous Australia, music has a more profound meaning than just mood management. In Indigenous contexts music and song in particular relate to influences and the accumulation and sharing of knowledge (Bradley, 2013). Thus, while studying people of a culture in their country of origin such as Indians in their subcontinent, studying Indians outside their country of origin, such as in England, may equally be validated. Arguably, cultural diversity can also be found within one nation – for example, within immigrant populations (Parekh, 2002), those of bi-cultural backgrounds (Tadmor & Tetlock, 2006), Indigenous people and ethno-cultural groups (Bennett, 2001) – manifesting distinct cultural features and generational differences.

Another question that can be asked of the literature reviewed is whether other cultural dimensions, such as the well-studied variable of individualism–collectivism (Bochner, 1994; Hamamura, 2012; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988;

Yoo, Donthu, & Lenartowicz, 2011), might affect cross-cultural emotion perception. The following section explores such cultural dimensions. These include measures of individuality or collectivism, uncertainty avoidance and power distribution in a culture.

4.4 Cultural Dimensions Theory

Hofstede (1984) defined culture as "the collective programming of the mind distinguishing the members of one group or category of people from others" (p. 21). A vital component to this definition is the term programming, which suggests that culture is learned, not inherited or given. Hofstede's cultural dimensions theory is widely considered seminal and is perhaps one of the most popular within the discipline of psychology (Gray, 1988; Marcus & Gould, 2000; Schwartz, 1994, 1999).

Using countries as indices of culture, Hofstede, Hofstede, and Minkov (2010) suggested six dimensions of culture for which variation could be measured on a bipolar scale (1–100), including: power distance (PD), uncertainty avoidance (UA), individualism vs. collectivism (IDV), masculinity vs. femininity (MAS), long-term orientation (LTO) and indulgence vs. restraint (IVR). Originally, the theory was created to identify differences and similarities between employees of the International Business Machines Corporation (IBM) (Hofstede, 1980a). Hofstede suggested that "organizational-culture" – the collective values, beliefs and principles of members of an organisation (Needle, 2010) – would influence the business behaviour of IBM employees. Later, cultural dimensions theory was adopted to measure the similarities and differences of national-cultures (Hofstede et al., 2010; Hofstede, 2001). As there is a plethora of available literature explaining each dimension in detail (see Hofstede et al.,

2010; Matsumoto, 1989; McSweeney, 2002; Ng, Lee, & Soutar, 2007), the following is a brief overview.

Power Distance reflects the extent to which some members of a national-culture accept that power is distributed unevenly. For example, the Indian caste system, in which members of a Hindu society are distinguished amongst each other according to their social order and class. UA identifies the degree by which a national-culture tolerates risk. For example, a national-culture with high UA will avoid confrontation. IDV measures how much being part of a group matters. For instance, national-cultures with high collectivism will more likely have people share their income with their family than people from a strongly individualistic national-culture. MAS measures the level of which a national-culture distributes gender roles. From a western perspective, high masculinity national-cultures will be more competitive, whereas feminine national-cultures are more caring and opposing of competition.[17] LTO amounts to a national-culture's emphasis on the future. For example, people from high LTO national-cultures will focus on future events rather than the present, such as persistently working hard to achieve a status (like buying a property) instead of living by the adage *carpe diem* (seize the day). Lastly, IVR measures the extent to which a national-culture allows gratification and desire. For example, high IVR national-cultures will tend to focus more on well-being and free-time.

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[17] To remedy the gender generalisation implied by Hofstede's terminology, this dimension is often identified as quantity of life vs. quality of life (Mayer, 1993).

In contrast to the views of Straub et al. (2002), Vonk (2012) and Poole (2004), who argued that culture cannot be defined along national boundaries, cultural dimensions theory is supported by a wealth of statistical evidence from a number of cross-disciplinary studies (see Bartlett & Ghoshal, 1999; Marcus & Gould, 2000; Schwartz, 1999) that measured intercultural national differences. These study suggested that the questionnaire used to gather cultural dimensions data is a compass for measuring *culture* in general and not specifically for organisational or national-culture. It is a measure of judgments, values and moral positions, grouped in dimensions. A nation or an organisation is simply a parameter setting the scope of *where* culture can be found. Cultural dimensions, this thesis argue, could be applicable to measure dimensions of culture from a remote community, for example, or dimensions of university-culture or any other parameter where learned judgments, values and moral positions exist within a social group. In other words, since the cultural dimensions theory questionnaire is a general measure of culture, one can explore beyond organisational-culture or national-culture – for example, investigating intercultural differences between North America and South America. We might observe that two different national-cultures, such as England and Australia, might share a similar culture and thus score similar along some cultural dimensions. And similarly, two communities sharing the same nationality, such as Australian and Indigenous Australian, might differ in their cultural dimensions. However, it is important to acknowledge that some items in the questionnaire might not be always be adequate to investigate *all* cultures*,* such as, "There is continuous investment in the skills of employees". Hence, while this theory offers a reductionist but adequate representation of culture, it may also be applied to other cross-cultural studies, including of music, culture and emotion. In line with this

thinking, the next section explores the national-cultures investigated in the reviewed studies by means of Hofstede's cultural dimensions.

4.5 Exploring National-Culture through Hofstede's Cultural Dimensions

Figure 2 (A–F) provides a descriptive analysis of the national-cultures identified in the studies reviewed. These have been coded according to Hofstede's cultural dimensions. Of the 10, only six studies were analysed, for the following reasons. Firstly, data for the Mafa culture from Cameroon as per the two studies conducted by Fritz et al. (2009) and Fritz et al. (2013) could not be located in any of Hofstede's studies and therefore were omitted from analysis. Secondly, the study conducted by Hoshino (1996) was not included because only responses from Japanese listeners judging Western Classical music were investigated. Thirdly, the study carried out by Wieczorkowska et al. (2010) was not included because participants were referred to as "western listeners", and therefore it is unclear which nations these listeners belonged to, although it was possibly the country of residence of the first author of the paper – Poland. Additionally, it is important to note that data for England were not specifically collected in any of Hofstede's studies. However, data were available for the United Kingdom (UK), and as

Figure 2 (A-F) Cultural dimensions comparisons between nations investigated in cross-cultural emotional responses to music.
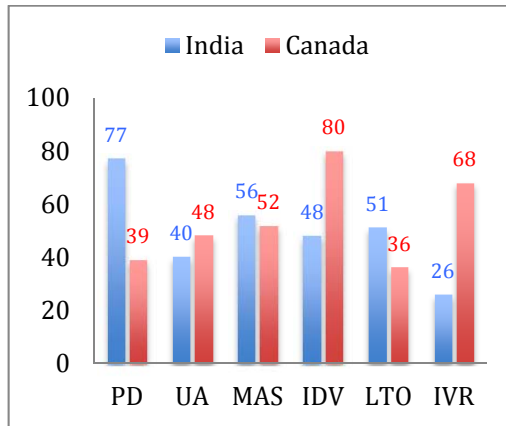
A: **Balkwill and Thompson (1999).**
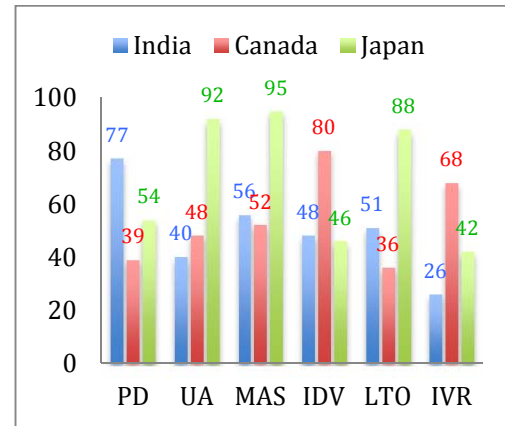
B: **Balkwill et al. (2004).**
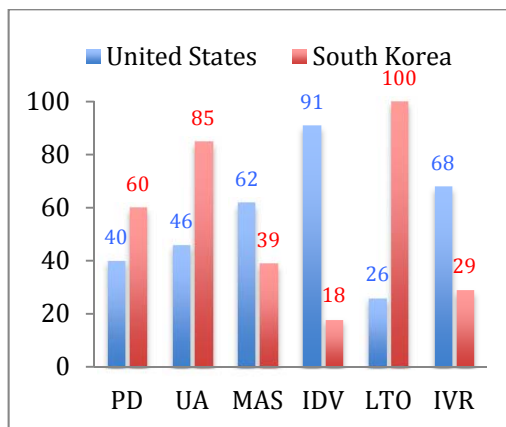
C: **Kwuon (2009).**
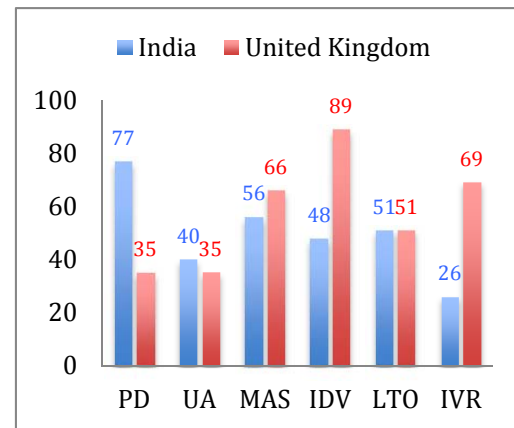
D: **Gregory and Varney (1996).**
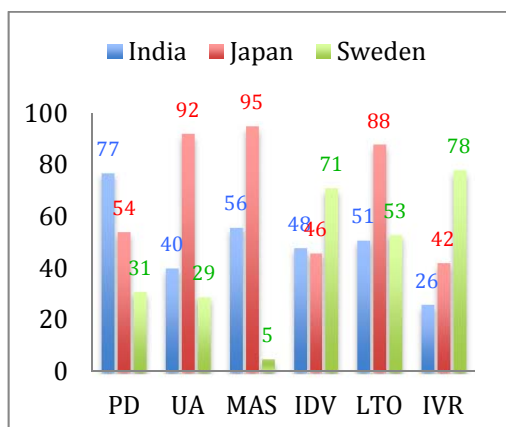
E: **Laukka et al. (2013).**
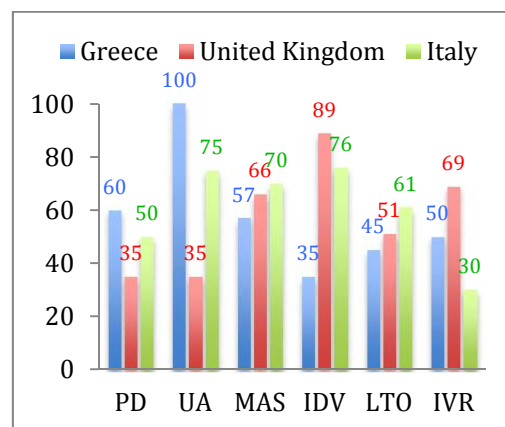
F: **Zacharopoulou and Kyriakidou (2009).**

Note. Based on data from *Cultures and organizations: Software of the mind: Intercultural cooperation and its importance for survival* by Hofstede et al. (2010), McGraw-Hill USA, New York.

England is one of three nations that form this kingdom, it was assumed to be a close representative and thus is used in this descriptive analysis.

4.6 National-Cultures Re-analysis Findings

An examination of Figure 2(A–F) reveals several differences and similarities between the national-cultures investigated. For example, India and South Korea both have high PD indices, while Canada, the UK, the US and Sweden all scored low on the same dimension. For UA, high scores can be noted for Japan, South Korea and Italy and low for the UK, the US and Sweden. Canada, the UK, the US, Italy and Sweden all scored high in IDV compared to low scores for Japan and South Korea. Similar MAS scores can be noted for India, the UK and Canada, IDV scores for India and Japan and UA scores for India and Canada. India and Japan, both eastern countries, as Roland (1991) emphasises, have vastly different cultures. In fact, apart from IDV, India and Japan are notably different in all the other five dimensions, as evident in Figure 2(F).

Nonetheless, given identified differences along some dimensions, such as UA and IDV, the data suggest that using "nation" as a simple index of those differences seems a reasonable approximation. In particular, using "nation" as a simple index resolves the methodological and practical implications of other more complex indices such as converting responses to long questionnaires prior to a listening experiment to identify an individual's implicit exposure to one or more cultures. However, the consistent similarities for certain cultural dimension scores between some nations that have been deemed to be different cultures in the literature reviewed suggests that defining culture in terms of nationality is an approximation. Accordingly, this research

suggests that using national-culture as an approximation of culture in cross-cultural studies of music and emotion is practical as long as the national-cultures investigated hold meaningful cultural dimensions' scores difference. The similar scores shared between two nations for some dimensions (for example, MAS) might explain why studies such as Balkwill and Thompson (1999) and Zacharopoulou and Kyriakidou (2009) found little national-culture variance, while more variance was observed in Kwuon (2009) and Laukka et al. (2013), which investigated national-cultures with major differences in cultural dimensions. For example, Figure 2(A) demonstrates substantial differences for three of six dimensions between Canada and India: (1) PD, (2) IDV and (3) IVR. The scores between the two national-cultures for the other three cultural dimensions are relatively similar. Correspondingly, Figure 2(D) demonstrates similar scores for three dimensions between India and the UK: (1) UA, (2) MAS and (3) LTO, while the other three dimensions show generous differences. Considering these similarities and differences leads to an argument which somewhat supports and at the same time reveals the limits of adopting nationality as a coding of culture in cross-cultural studies of music and emotion. Thus, while investigating national-cultures for the studies of cross-cultural emotion communication in music is a reasonable approximation of culture, identifying national-cultures with more differences than similarities in cultural dimensions may provide a more sophisticated cross-cultural distinction. Studies such as Fritz et al. (2009) and Fritz et al. (2013) provide evidence in favour of such an approach. Both these studies investigated distinctive national-cultures. Yet this thesis emphasises that while the approach of finding remote national cultures is adequate for cross-cultural studies of emotion in response to music, another alternative

is to identify cultural differences through an evaluation of the cultural dimensions proposed by Hofstede. The latter method is a better account of a people's culture.

None of Hofstede's dimensions make explicit predictions about the communication of emotions reported in the reviewed studies, making it difficult to pinpoint the most representative dimension that could be implicated in explaining differences in emotional responses across cultures. However, a crude comparison between the results of the reviewed papers and differences in cultural dimensions appears to indicate that lower recognition of anger stimuli compared to music intended to be happy or sad generally occurred when the encoding musical culture rated moderate to high UA indices. This is the focus of the following chapter.

4.7 Summary

- The coding of culture in the studies reviewed did not take into account the many other cultural dimensions that contribute to culture.

- A more comprehensive approach to defining culture was suggested by adopting the cultural dimensions theory as proposed by Hofstede. This chapter suggested that using national-cultures as indices of culture is a reasonable approximation. However, a more sophisticated approach, it was argued, would investigate listeners with prominent cultural dimensions score differences, rather than national distance.

Chapter 5 – Anger Perception and Induction in Response to Music

There is considerable agreement that anger is a basic emotion that can be communicated and recognised universally in response to facial expressions (Ekman & Friesen, 2003; Izard, 2007; Sauter, Eisner, Ekman, & Scott, 2010). However, as identified in Chapter 3 such a claim does not hold in cross-cultural studies of music and emotion. In particular, results from the literature reviewed provided limited evidence for universal communication of anger in response to music. This chapter aims to explain this variability. The results for anger responses are further investigated through selected contemporary theories, models and understandings of cross-cultural communication and emotion communication in music, including (1) the role of psychophysical cues, (2) dialect theory, (3) uncertainty avoidance, (4) musical fit and (5) the cue-redundancy model. In light of these explanations and their limitations, this thesis proposes a theory that uses the lens model of communication in music as a framework to explain cross-cultural and musical culture variance: This is called the "stereotype theory of emotion in music" (STEM).

5.1. The Role of Psychophysical Cues

Traditionally in music psychology, findings of universality in emotion perception are interpreted as evidence for the proposition that specific, appropriate manipulations of the redundant psychophysical cues in music can infer specific emotions (Juslin & Laukka, 2003; Laukka et al., 2013). For example, fast percussive

rhythms are associated with the perception of anger (Laukka et al., 2013). It is widely held that listeners are capable of perceiving such basic emotions regardless of their culture (see Chapter 3 and Balkwill & Thompson, 1999; Balkwill et al., 2004; Egermann, Fernando, Chuen, & McAdams, 2015).

Eerola and Vuoskoski (2011) and Juslin (2000) examined the communication of anger among other emotions, encoded by professional musicians and decoded by naïve listeners. The results suggested that anger was mostly communicated between musicians and listeners. Juslin (2000) concluded that both performers and listeners associated (and communicated) anger with fast tempo, very high sound level, legato articulation, high frequency spectral energy, complex rhythm and sudden rhythmic changes such as syncopations (Juslin & Lindström, 2010).

As identified in the literature review, in cross-cultural studies, professional musicians were not always able to convincingly communicate anger using a similar set of musical cues in comparison to the emotions happiness and sadness. Anger was clearly communicated in Western Classical music but not in Korean, Japanese and Swedish Folk music. Therefore, it is unclear why an appropriate set of psychophysical cues communicates anger in some musical cultures but not so well in others, indicating the issue to be a cultural one.

For these reasons, manipulations of psychophysical cues alone do not explain cross-cultural anger variance in music. If culture makes a significant contribution, how does it do so?

5.2 The Lens Dialect Theory

In the study reviewed in Section 3.4, Laukka et al. (2013) suggested that some cues might be culture-specific and viewed as a form of "dialect" communication. People from the same culture capable of understanding this "dialect" may have a better chance of communicating and understanding the emotional meaning in music than people unfamiliar with the culture. This argument has been referred to as dialect theory (Elfenbein & Ambady, 2002). Dialect theory, as Elfenbein, Beaupré, Lévesque, and Hess (2007) wrote, "proposes the presence of cultural differences in the use of cues for emotional expression that are subtle enough to allow accurate communication across cultural boundaries in general, yet substantive enough to result in a potential for miscommunication" (p. 131). Thus, Laukka and colleagues hypothesised that performers use a set of cues to express emotion in their particular musical culture, and a listener of the same musical culture better decodes these cues. Their findings suggest an in-group advantage for the majority of the intended emotions, such as anger in Western Classical music being better recognised by Swedish listeners in comparison to Indian and Japanese (Table 2). However, the dialect theory cannot explain why Japanese and Swedish listeners were more capable of recognising anger in Western Classical music and also in Hindustani *Ragas* than in their own musical culture. Thus, the reason for poor cross-cultural anger decoding remains anomalous. Aiming to better understand this unusual occurrence, the UA dimension, discussed in Chapter 4, is further investigated.

5.3 Uncertainty Avoidance (UA)

Hofstede (1980b) defined the dimension "uncertainty avoidance" (UA) as "the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations" (p. 45). UA acts as a form of cultural doxa. For example,

the members of national-cultures high in UA will likely be more reticent in expressing anger as an expected normative behaviour. Modifying anger expressions is an outcome of a cultural code that establishes how to express emotion and determines what is justifiable in specific contexts. UA is therefore particularly relevant to judgments of anger because anger is one particular reaction to a transgressive behaviour (Carver & Harmon-Jones, 2009). The specific national-cultures for which anger variance in response to music was identified will now be re-examined in light of the UA data.

The national-cultures for which the anomalies were noted are Japan, India, Korea and Sweden. Hofstede et al. (2010) suggested that national-cultures with high UA such as Japan and Korea maintain rigid codes of conduct and are intolerant of unorthodox behaviour. Mesquita and Walker (2003) argued that "[c]ultures that devalue anger, such as the Utku Inuits, the Chewong of aboriginal Malaysia, the Tahitians, and the Japanese tend to reduce the in-group contexts in which anger is likely to emerge…thus avoiding the experience of 'improper' emotions" (p. 780). There is considerable and growing empirical evidence that some national-cultures high in UA minimise anger expressions (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986; Gudykunst & Ting-Toomey, 1988; Gudykunst, Ting-Toomey, & Chua, 1988; Gulz, 1992; Hofstede et al., 2010; Matsumoto & Ekman, 1989; Matsumoto, Yoo, & Chung, 2010; Matsumoto et al., 2008; Schimmack, 1996). In contrast, national-cultures with a low UA are less rigid and more tolerant of expressions of anger.

The results of the study by Kwuon (2009) reviewed in Chapter 3 corroborate the above hypothesis: American listeners demonstrated statistically significant anger

recognition in response to Korean music, while Koreans listeners did not. As Kim and Zane (2004) write, cultures with Asian backgrounds may "be less inclined to become angry and more inclined to control anger" (p. 154). This is because in the cultures found in America, expressions of anger are tolerated, while national-cultures such as Japan and Korea are less open to these expressions. Therefore, high UA could be seen as de-amplifying one's sensitivity to the expression of anger.

As Figure 3 indicates, Japan and South Korea have high UA scores (92/100 and 85/120, respectively), compared to a low 40/100 for India and 29/100 for Sweden. As per Hofstede et al. (2010), the midpoint of the scale is 50, and any score lower than this number is a low score, while above this number is a high score. In the case of UA, a national-culture with score of 29 is considered less intolerant of uncertainty than a national-culture with a score of 40. These indices can be compared with Table 2, which draws together the anger rating data gathered from the reviewed literature. At 92, Japan is one of the highest UA national-cultures in the world, with many etiquette books detailing how people should behave in given situations (Hofstede et al., 2010). On the other hand, Sweden scores the lowest of all four national-cultures investigated.

Figure 3 – National-culture scores on a scale from 1 (lowest) to 120 (highest).
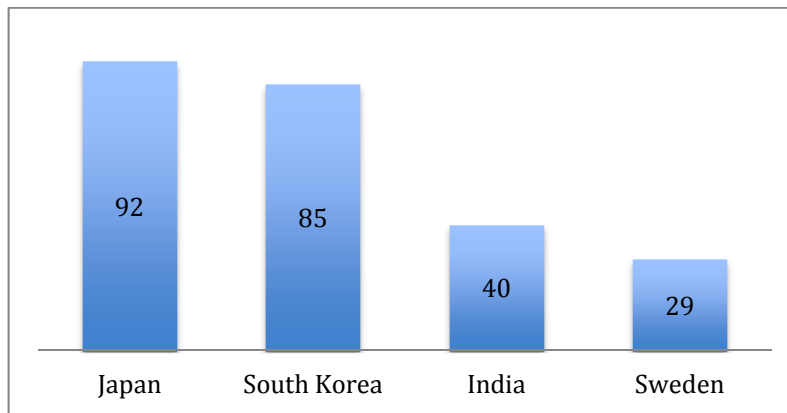
Adapted from *Cultures and organizations: Software of the mind: Intercultural cooperation and its importance for survival* **by Hofstede et al. (2010), McGraw-Hill USA, New York.**

Table 2 highlights that anger was (1) perceived by American listeners but not by Koreans in response to Korean traditional music; (2) perceived by Indian listeners but not by Canadian, Japanese and Swedish listeners in response to Hindustani *Ragas*; (3) perceived by Indian and Swedish listeners but not by Japanese in response to Western Classical music and (4) not perceived by Japanese, Indian and Swedish listeners in response to Japanese traditional and Swedish Folk music. It is possible that Japanese and Korean listeners each gave low anger ratings to stimuli intended to be angry in their respective "in-group" musical cultures because their UA tells us anger displays are avoided and uncommon in those cultures. This is illustrated by the poor anger communication that occurred between the Japanese and their music (Laukka et al., 2013) and South Korean listeners in response to Korean traditional music (Kwuon, 2009). This also explains why in the latter study American listeners, with a low UA of 46 – meaning that they are reasonably open to displaying anger – were better than Korean listeners in perceiving anger in response to Korean traditional music. The same reasoning explains why anger in western music (UA = 49) intended to communicate the

same emotion was better recognised than anger in Japanese and Swedish music. Indian listeners, on the other hand, appear to exhibit some degree of tolerance for anger (UA 40).

To summarise, it appears that decoders from high UA national-cultures avoid expressing anger. However, this account seems dubious as it does not explain why in Laukka et al. (2013) all three cultural groups – including Japanese listeners who have a high UA – recognised anger in Indian and Western Classical music but to a considerably lesser extent in Swedish Folk and Japanese traditional music. High UA national-cultures such as the Japanese would avoid the expression of anger in all musical cultures. Instead they perceived anger expressed in some musical cultures such as Hindustani *Ragas* relatively well, and not very well in others, such as their own. Likewise, Swedish listeners with a low UA of 29 would seem likelier to identify the expression of anger in all musical cultures; however, the results show low ratings in relation to their own and Japanese traditional musical cultures but not for western and Hindustani music. For as much as UA appears to explain the variance in responses to perceived anger for some national-cultures, it does not account for all cross-cultural variance. The following section therefore aims to more directly explain cross-cultural emotional communication in music for which anger variance can be explained for all musical and national-cultures.

Table 2 – Mean anger recognition accuracy ratings comparisons of four national-cultures, showing corresponding uncertainty avoidance indices.

Participants	Anger Ratings for Korean traditional music (UA = 85)	Anger Ratings for Hindustani *Ragas* (UA = 40)	Anger Ratings for Western Classical music (mean UA for western countries = 49)	Anger Ratings for Japanese traditional music (UA = 92)	Anger Ratings for Swedish Folk music (UA = 40)
Korean (mean total)	3.48 (SD = 3.31)				
American (mean total)	5. 61 (SD = 3.00)				
Canadian		2.74 (SE = 0.51)			
Indian		6.2★	5.1★	2.6★	1.1
Japanese		4.7★	4.6★	2.2v	2.5v
Swedish		4.6★	5.7★	2.1v	2.8★

Note: ★ Chance level = 20%, *p* <.05

      Chance level = 9.09%, *p* < .05 (Bonferroni corrected)

SD = Standard Deviation

SE = Standard Error

No UA exists for western. However, the studies reviewed adopted "western" to describe the following national-cultures: Canada (Balkwill & Thompson, 1999) – UA (48), England (Gregory & Varney, 1996) – UA (35), Germany (Fritz et al., 2009) – UA (65) and America (Kwuon, 2009) – UA (46). Thus, a mean UA of 49 appears to be the best appropriate representation for *western national-culture.*

Means have been scaled to a 0 to 9 range for ease of comparison.

Adapted from Laukka et al. (2013), Kwuon, (2009) and Balkwill and Thompson (1999).

5.4 Musical Fit

Areni and Kim (1993) examined the effects on consumers when background Western Classical music versus popular music were played in a wine shop. When classical music was being played, customers bought more expensive wines than when "Top 40" music was being played. Areni and Kim concluded that the specific musical culture affected consumers buying patterns because the music fitted the attributes of the wine. In other words, customers associated classical music with more expensive and perhaps more refined wines and cheaper wines with Top 40 music. Customers, Areni

and Kim argued, "fitted" classical and Top 40 music to certain characteristics of membership of a social category (Rentfrow & Gosling, 2007), including the ideas that Classical aficionados were more likely to be well educated, living in urban environments and members of a high social class from higher socio-economic groups than Top 40 music enthusiasts (Bourdieu, 1984, 1987; Katz-Gerro, 2002). Areni and Kim (1993) called this effect "musical fit". Musical fit proposes that music is capable of triggering associations with certain attributes of a product. These associations influence the consumer's choice because they trigger information that a consumer associates with a product. Hence, music indirectly affects the buying patterns of consumers.

The effect of musical fit was further examined by North, Hargreaves, and McKendrick (1999), who investigated the extent to which attributes of French and German music affected individuals' buying patterns of French and German wines. The results revealed that more French wines were sold when French music was being played in a wine shop, and German wines' sales outperformed French when German music was being played. North and his collaborators concluded that wine sales were strongly affected by customers' stereotyped representations. French and German music matched customers' stereotypical notions of France and Germany, which in turn affected the choice of wines bought.

In recent years a few cross-cultural studies on musical fit have emerged (see Yeoh & North, 2010a, 2012; Yeoh & North, 2010b). Such a study was conducted by Yeoh and North (2009), which compared the effects of musical fit of Malaysian, Indian and Chinese students on their choice of Malay and western food while either Malay or

"Indian" music was playing in the background. The results indicated that when Malay music was being played, Malay food was chosen more than Indian food and vice versa. In other words, the results indicated a musical fit effect.

Emotional responses, too, such as the variance in the perception of anger in music across cultures, might also be explained by adopting a musical fit framework. From the decoder's perspective, and extending the ideas discussed in UA to the idea of musical fit, anger should fit more with the music of some cultures than others. For example, Hindustani *Ragas* fit anger responses better than Japanese traditional Folk music because the national-culture of India scores a moderate UA compared to a very high UA for Japan.

Musical fit explains how cultural associations in general are activated and lead to changes in behaviour. Specifically, knowledge associated with a particular music genre or musical-culture fits particular buying behaviour. Musical fit argues that playing classical music in a particular setting evokes associations with which expensive wines or cuisines are associated and therefore are more likely to become activated when the purchasing decision is made. Yet despite some similarities, emotion and product priming are different. Another difference is that the associations induced by musical fit are largely inaccessible to conscious attention, unlike the responses reported in the studies reviewed, which are conscious.

These limitations make musical fit theory inadequate in explaining anger variance in cross-cultural studies of music and emotion. However, the cue-redundancy

model (Balkwill & Thompson, 1999), shown in Figure 1, Chapter 3, considers these issues. Therefore, the following section recognises the value of this model and applies it to explain the anger variance identified in the literature reviewed.

5.5 Applying the Cue-Redundancy Model to Anger Variance

Through their study of western listeners' responses to Hindustani music, as discussed in Chapter 3 Balkwill and Thompson (1999) asserted that "[w]hen familiar cultural cues are absent, the listener must pay more attention to basic perceptual cues, such as tempo and complexity. These cues allow the listener to gain a general understanding of the intended emotion" (p. 45). That is, emotional perception in music is constructed from psychophysical and culture-specific cues. Yet, should a listener not decipher culture-specific cues because he or she is not familiar with the musical culture, the emotions conveyed in the music can still be recognised solely by the performer's manipulated psychophysical cues (see Figure 1). "Listeners' ability to decode musically expressed emotion is affected both by their familiarity with the conventions of the tonal system and by their sensitivity to acoustic cues. The expression of emotion in the music of a given culture is most salient to listeners of that same culture, because such listeners have acquired the ability to decode conventional cues of emotion" (Balkwill et al., 2004, p. 338). To keep with the example of Samba music given in Chapter 3, listeners familiar with this musical culture perceive emotion not just from, for example, the rhythms, melodies, pitch and tempo of the music, but also their familiarity with the musical culture and cultures where this music is prevalent, such as the cultures found in Brazil. However, listeners not familiar with this culture and its music may regardless

perceive the emotions Samba is trying to communicate via the rhythmic, melodic, pitch and tempo cues.

The cue-redundancy model therefore provides a framework for understanding the variance identified in cross-cultural emotional communication in music. The model reflects the importance of culture in music and emotion and draws attention to the consideration of a cultural component that can act either in combination with, or in distinction from, the emotion generated through psychophysical cues alone. Nonetheless, the model does not specifically provide particulars on how culture-specific cues affect and alter emotional perception beyond the generic level of culture (i.e. "culture-specific"). The following section builds on the cue-redundancy model by proposing *how* culture-specific cues might affect and alter emotion perception.

5.6 Stereotype Theory of Music and Emotion – STEM

Hilton and Von Hippel (1996) defined a stereotype as "beliefs about the characteristics, attributes, and behaviours of members of certain groups. More than just beliefs about groups, they are also theories about how and why certain attributes go together" (p. 240). For example, stereotypes can explain why people make remarks about race or gender in connection with a group of people otherwise unknown to the individual making the stereotyping judgment.

A great deal of research has demonstrated that stereotyping underlies many social interactions, including cross-cultural ones (Ritter, 2013). Durrheim and Dixon (2013) and Von Hippel et al. (2005) suggested that once the stereotype is constructed, it

is more likely that the stereotyped attitude is liable to be generalised to a collective, such as a cultural group. Just as some musical genres, such as rap and heavy metal can be stereotyped as "problem music" (North & Hargreaves, 2006), assumed to be capable of expressing and triggering anger responses (Gowensmith & Bloom, 1997), the emotions which music can generate might be susceptible to cultural stereotyping, too.

The idea of stereotyping can therefore be extended to explain cross-cultural emotional communication in music and to address anomalous findings regarding the communication of anger. When communicating an emotion in music, the psychophysical cues are passed through a "stereotyping" filter that primes a "stereotyped" mental representation of the culture the music represents, in a manner resembling the process of musical fit. This presents the basis upon which this thesis proposes the stereotype theory of emotion in music (STEM). STEM can be presented within the framework of Juslin's (1997) lens model for emotional communication to demonstrate how it acts throughout the different stages of emotional communication.

Juslin (1997) proposed a model for emotional communication in music performance based on Brunswik's (1956) lens model. Juslin's application of the revised (Juslin, 2000) and later expanded (Juslin & Lindström, 2010) lens model describes the communication of emotion in music. The model explains how a composer's emotional intention and a performer's expressive nuances encode (i.e. musicalise) emotions by means of probabilistic but partly redundant cues and how a listener decodes (i.e. determines) the intended emotion by means of the same cues. Juslin (2000) states that these cues are "probabilistic in the sense that they are not perfectly reliable indicators of

the intended emotional expression" (p. 1798). Given that these cues are probabilistic, a certain amount of "flexible" understanding is required. All three parties' (the composer, the performer and the listener) judgment of the same cues may be, to a certain extent, fluid. Specifically, the judgment of a cue is partly based on the encoder's and decoder's implicit understanding of it. While this fluidity may assist in communicating the intended emotion, it may also hinder the communication so that an emotion mismatch between a composer or performer and a listener is possible.

The stereotype theory of emotion in music uses the lens model as a framework but adds a crucial component – namely a stereotyping filter at the decoding stages of emotion communication. This is illustrated in Figure 4.

Composers and performers will, according to STEM, draw upon a limited set of psychophysical and culture-specific cues, such as perfect cadences in a western tonal system, the heavy use of syncopations in some Latin musical cultures, or using a piano in western music rather than a chinese *guqin* (for a detailed discussion on musical expectation, see Huron, 2006) to encode emotion in the music. This encoding acts as a form of dialect reviewed above, as proposed by Laukka et al. (2013). On the other hand, the decoding stereotype filter is the expectation of the listener about the encoding culture associated with the music, should one exists, such as Japanese culture being reticent about expressing anger. However, if no defined stereotype exists, the decoding stereotype filter is not activated as no culturally predetermined (superordinate) representation can be activated and the emotion might still be communicated by means

of the psychophysical or culture-specific cues. Therefore, the decoder's perception of the encoded emotion may be different to that intended by the encoder.

Figure 4 – The stereotype theory of emotion in music.
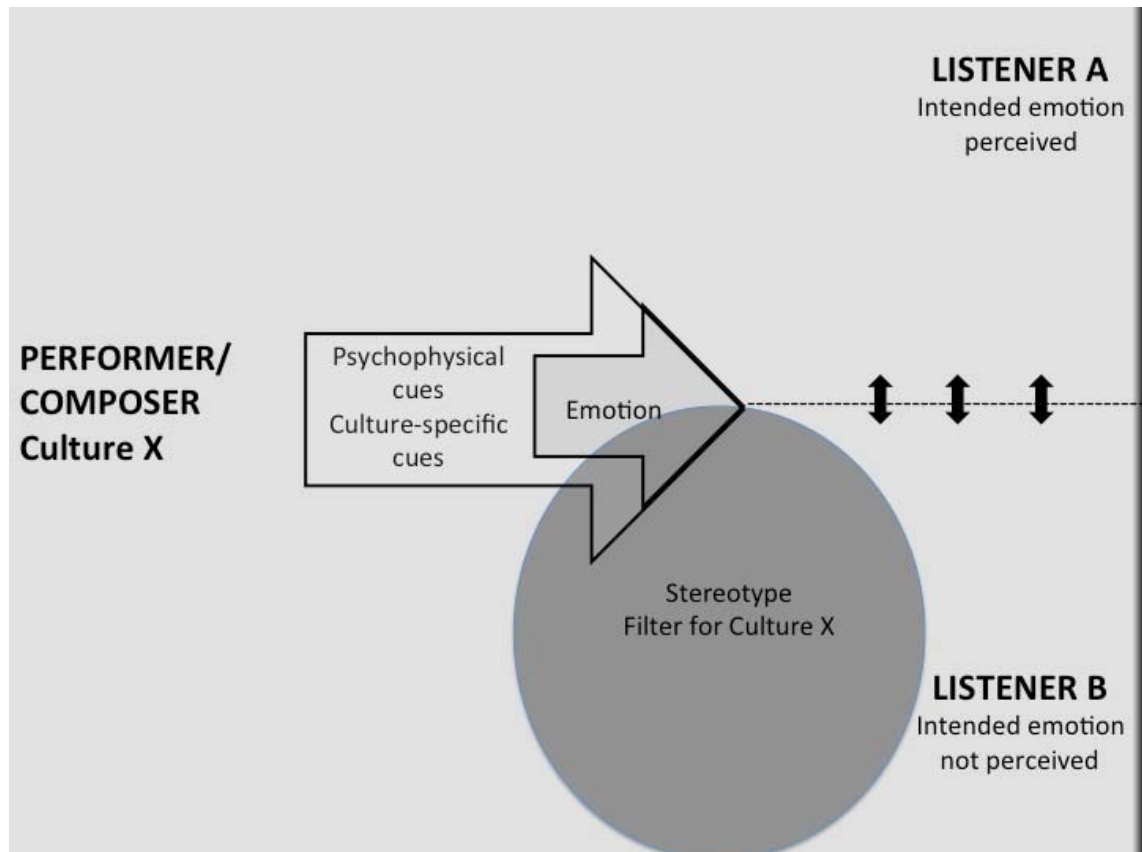
Emotion is encoded into the music by a composer/performer from culture X. They use their musical knowledge to express an emotion (for example, anger) via a manipulation of the psychophysical cues and knowledge of culture X-specific cues, such as using a particular set of scales, rhythms or timbre specific to culture X. An example shows how two listeners decode the emotion. Listeners A and Listener B have access to the psychophysical and culture-specific cues. Listener A holds no stereotype of Culture X (i.e. has no access to the Stereotype Filter, grey ellipse) and so is able to decode the intended emotion (anger) by means of the psychophysical and/or culture-

specific cues. However, Listener B holds a stereotype of Culture X, for example that anger is repressed in this culture. Because of this, the stereotype filter is activated (grey ellipse) and Listener B ignores the psychophysical and culture-specific cues. Anger is not perceived. The dotted line indicates the degree to which a listener does or does not use cultural stereotyping of the encoding culture to decode emotion.

According to STEM, Japanese, Indian and Swedish listeners perceived anger more intensely in Western Classical and Hindustani Ragas rather than Japanese traditional and Swedish Folk music because the listeners held stereotypes of the cultures of Japan and Sweden being reticent of anger. For Japanese music, this stereotyping can be explained by the high UA of that national-culture. However, based on Sweden's low UA, it is unlikely Swedish listeners would be reticent to anger in response to any musical culture, including Swedish folk music. Nevertheless, regardless of their UA score, they might still have a stereotype associated with some cultures, including their own. Interestingly, Pergert, Ekblad, Enskär, and Björk (2008) write that "the Swedish norm is to be controlled, emotional expressions of anger in particular" (p. 652) and so it is possible that the culture found in Sweden is more controlling of anger than indicated by their low UA score of 29, particularly in respect to their own music. According to a number of studies by Turner and colleagues (Hogg & Turner, 1987; Turner, 1982; Turner, Oakes, Haslam, & McGarty, 1994), *self-stereotyping* is a psychological process through which a person categorically sees themself defined as member of a group, which in turn gives a meaningful sense of *self.* It is entirely appropriate to assume that Japanese, Korean and Swedish listeners self-stereotyped as anger reticent in the context of listening to music of their own, respective cultures. Furthermore, American listeners

may not have a stereotype attached to Korean Folk music and perceive anger (M = 5. 61) unlike Korean listeners (M = 3.48 on a scale from 0-9). STEM proposes the existence of a stereotyping filter that simplifies the process of assigning emotion in music to superordinate knowledge, such as rap music to anger or Japanese traditional songs as reticent of anger. STEM is therefore able to account for the anomalous findings of anger identified in the literature, and is able to explain more data than previously proposed theories.

The theory explains that stereotyping can override a composer's or performer's intention to communicate certain emotions, such as anger. STEM acts as a filter, simplifying the process of assigning music to meaningful categories, such as rap music to anger or Japanese traditional songs as reticent of anger. STEM is therefore able to account for the anomalous findings of anger identified in the literature and is able to explain more data than previously proposed theories.

5.7 Summary

- Cross-cultural anger variance in response to music was found to be a cultural issue, despite the role of psychophysical cues in anger expressive music.

- National-cultures with a high uncertainty avoidance (UA) tend to avoid expressing anger. Thus when a listener from a high UA national-culture perceives anger in her or his own musical culture, the expression is

avoided and so not decoded. Listeners from Japan and South Korea were identified as two examples. Yet not all national-cultures could be explained by means of the UA dimension.

- Musical fit was used to explain how associations between a musical culture and an emotion might occur when listening to emotive music. However, musical fit does not explicitly explain emotional communication.

- The cue-redundancy model suggests that culture-specific cues affect cross-cultural emotive responses in music, but it does not explain the specific mechanism of the cultural cues.

- The lens model of emotion communication in music was adopted as a framework in which a stereotype filter component was included. It was argued that a stereotype filter acted upon the encoding and decoding of emotions in music. This stereotype filter plays a particularly important role for the decoder, as it simplifies the process of assigning music to meaningful categories.

- The stereotype theory of emotion in music (STEM) was proposed and asserts that stereotyped association of the way a particular culture expresses anger may influence listeners' emotional perception thereof.

Chapter 6 – Discussion And Conclusion

6.1 Thesis Overview

This thesis aimed to investigate to what degree emotional responses in music are universally communicated versus through culture-specific conventions and to assess the findings critically. The topic was approached by conducting a literature review of empirical studies carried out in music psychology over the period 1996 to 2013.

Chapter 2 – tabulated 10 studies of such cross-cultural research and provided an overview of the main conclusions reached by the authors of the studies. A detailed analysis of the studies was conducted in Chapter 3 and revealed some consistent findings but also several conflicting and inconsistent results, which this thesis reconciled by proposing theories which explained conceptions of culture and some anomalous findings. There was no strong consensus that leaned towards either side of the universal–culture-specific continuum. Two papers leaned towards the universal communication of emotion, four towards the culture-specific and the remaining four studies suggesting both to certain extents. The three main issues that emerged as a result of the literature review were as follows:

(a) There is no consensus in the literature as to whether or not culture affects emotion communication in music.

(b) The definition of "culture" adopted by the authors is usually limited to "nationality".

(c) Generally, the perception of anger in music appears to be cross-culturally less well recognised compared to other emotions such as happiness and sadness.

This thesis therefore aimed to reconcile these issues by systematically evaluating current understandings of nationality and of anger communication in music.

6.2 Main Findings

Chapter 4 examined the utility of defining culture in terms of nationality, since this surprisingly consistent approach was left unscrutinised in the reviewed literature despite the highly complex nature of culture. Alternate perspectives of culture were considered. Interestingly, Hofstede's (1980a) cultural dimensions theory also used nations as a parameter by which to delimit culture.

A re-analysis of the national-cultures investigated in the literature reviewed was undertaken using cultural dimensions theory. The re-analysis revealed that studies that investigated national-cultures with similar cultural dimensions indices exhibited relatively small amounts of variance between the distinct groups. On the other hand, anger variance was noted for studies that investigated national-cultures with substantive differences in the specific dimension "uncertainty avoidance" (UA). As a result, a possible explanation of why anger is not communicated across cultures through music in terms of UA was presented to explain the universal communication of anger responses to music. It was concluded that using nations as indices of cultures was a simple, yet sensible limitation in a field of research (music psychology) where efficient collection of empirical data is paramount. That is, although Hofstede's dimensions are a more sophisticated approach to understanding culture in future research, the simple

index of national-culture is an adequate single response approximation, but a cultural dimensions analysis would generate a more detailed account of culture. The UA dimension emerges as an important candidate for explaining some of the anomalous findings of the thesis.

Chapter 5 focused explicitly on the variability of the perception of anger across cultures, the key anomalous finding of the literature reviewed. The results for anger responses were investigated through selected contemporary theories, models and understandings of cross-cultural emotion communication in music. A re-analysis of anger responses through UA suggested that anger variance generally occurred for music with emotion encoded by national-cultures with high scores in UA. UA measures the degree to which a national-culture avoids uncertainty. It was suggested that national-cultures with high scores in this dimension avoid expressing anger, as it is an emotion leading to unpredictable circumstances. Consequently a new theory was developed to explain anger variance for national-cultures with low UA indices.

It was suggested that music goes through an encoding and a decoding stereotype filter. The stereotype filter is activated based on associations previously connected with the culture and its music. Based on the data of the review, it was emphasised that a decoder's perspective of how to perceive a particular emotion depends on the stereotyping of a specific culture by the decoder. If no defined stereotype of the target (encoding) culture exists, emotion might still be communicated by means of the universally understood psychophysical cues. Hence, it was concluded that anger was neither cross-culturally nor intra-culturally communicated in Japanese and Swedish

Folk music because anger did not fit with stereotypes of Japanese and Swedish culture. This was explained by the newly developed stereotype theory of emotion in music (STEM).

The lens model of emotional communication in music Juslin (2000); Juslin (2010) was adopted as a framework to ascertain the possible influences STEM can have in both the encoding and decoding stages of communication. The addition of a stereotype filter capable of modifying the emotion induced and perceived was proposed. Fundamental to STEM is the listeners' decoding process. Thus, the modification is emphasised on how an individual thinks a culture and its music conditions emotion.

6.3 Limitations of the Thesis

The issues in cross-cultural studies of emotion and music reported in this thesis provide starting points for addressing part of the universal–culture-specific debate that persists. However, in addition to the thesis delimitations discussed in Section 1.2, there are further limitations to this thesis. Firstly, this thesis was based only on reviewed literature and social psychology approaches to the definition of culture and stereotype. Approaches to culture outside these disciplines were not considered. Secondly, this thesis focused its investigation on basic emotions. However, only anger, happiness and sadness were investigated comprehensively, even though cross-cultural distinctions in the perception of fear can be noted in Laukka et al. (2013). Furthermore the literature reviewed did not provide the opportunity to investigate alternative models of emotions such as dimensions of emotions which are commonly used in other areas of music psychology research (Eerola & Vuoskoski, 2013).

6.4 Future Directions

The ideas and critical review presented in this thesis proved a formative new understanding of cross-cultural emotion communication in music. Future work in this field should test these ideas by conducting empirical investigations specifically focused on the new theoretical findings and identified limitations of the literature. It would also be interesting to see if other emotions, such as fear, can also be explained by STEM. This is an important task for future research given the difficulties reported in distinguishing between anger and fear (Eerola & Vuoskoski, 2011; Juslin, 2000). Future studies might investigate if STEM explains emotion felt or emotion expressed by the music, because the two loci do not always produce the same response for a given emotion (Evans & Schubert, 2008; Schubert, 2007). STEM also predicts that through the universally understood psychophysical cues, anger *will* be perceived if the decoding culture has no stereotype of the way the encoding culture conditions this emotion. The current literature has not investigated such an approach because of the absence of a theory to drive such a hypothesis. Careful consideration of which cultures do not carry such stereotypes will be needed.

As brought to attention in this thesis, it is important to note that two studies (Wieczorkowska et al., 2010, and Zacharopoulou and Kyriakidou, 2009) included in the literature review, adopted vocal music. While the decoding culture did not understand the language used in the music, anger was well communicated cross-culturally. Could vocal tonal properties have helped the listeners understand the perception of anger, resulting in the cross-cultural communication of anger? According to Bowling et al., (2014), which examined the emotional arousal and valance to vocal emotion

expressions, vocal emotional expressions can help us understand associations between emotion and musical mode. Future studies should examine this proposition by using 2 independent variables both associated to a cultural stereotype, one being vocal music stimuli, and the other being the same stimuli without the voice (i.e. instrumental).

The relationship between the nations investigated in the studies reviewed and cultural dimensions theory, particularly for UA, is an area of potentially rich future research in music psychology. A suggestion for future research is thus to dismantle and reconstruct the definition of culture as national-culture and seek alternative approaches to classifying culture. A tentative definition might be the one adopted as per Hofstede's cultural dimensions theory (Chapter 4), although other mentioned cultural models such as the multi-phase, multi-level research program global leadership and organisational behaviour effectiveness (GLOBE) (Trompenaars & Hampden-Turner, 1998) might also provide useful insights. Future studies could focus in particular on the UA dimension in terms of its potential to explain divergent outcomes in the cross-cultural perception of anger in music (in addition to other emotions that are subject to display rules in a given culture (Matsumoto, 1990; Matsumoto et al., 2008), rather than relying solely on national-culture, which currently dominates the music psychology literature.

Only one culture found in Africa and no cultures found in South America or their musical cultures were identified in the reviewed literature on emotional responses to music. On the other hand a good amount of data is available on emotional responses to western music, and these emotions appeared to be well recognised in comparison to other musical genres. Perhaps this can be identified as a discourse of western

hegemony. Western culture has become globally predominant (Iwabuchi, 2002), an issue that was identified by Fritz et al. (2013). Continuing to investigate non-western cultures is an important direction for future exploration if the research in this field is to truly explore cultural diversity rather than continue to emphasise a largely western perspective (Egermann et al., 2015) and a small number of "other" cultures.

6.5 Conclusions

This thesis concludes that while the basic emotions of happiness and sadness are perceived universally through the psychophysical cues manipulated by the composer and musician, the perception of anger is culturally influenced through a stereotyping process. Stereotyping of emotional responses to music becomes dominant if a defined stereotype of a culture exists. Cultures with high UA indices control or avoid expressing anger and thus become stereotyped as reticent of anger, despite (or in addition to) the encoders' best attempts to encode the target emotion in their music. However, if no stereotype exists, emotions not subject to strongly imposed display rules, such as anger, should be communicated cross-culturally via the universally understood psychophysical cues.

STEM theory can explain cross-cultural emotional responses. It can also illuminate intra-cultural emotional perceptions and the emotional perception of particular music genres. Such advances may assist in addressing another important dilemma in the field of music psychology: How might researchers come to better understand stereotyping as it operates in the context of music perception research and in the minds of research participants? In 2006, Huron wrote of cross-cultural fieldwork

and his failure to comprehend the meaning being conveyed by a Lakota singer from South Dakota:

> A few years ago I was a volunteer on a project related to the Dakota. Much of the time was spent interacting with Steve (Big Sear) Emory, a traditional Lakota singer from South Dakota. Emory would regularly break into song. One evening, we were standing outside under a dark sky and he began singing. I closed my eyes and enjoyed the graceful beauty. I knew it was unlikely that he would sing a Sun Dance song or a healing song. Perhaps, I thought, he was singing a lullaby. Instead, after he finished, he told me it was a horse-stealing song. I realized that I had completely missed the playfulness and bravado of his singing, listening for spirituality and depth when spiritedness and machismo were more appropriate. Without knowing the Lakota language, I had utterly misconstrued the musical genre. It was one of those privately embarrassing moments that highlights the discrepancy between wishes and reality. (Huron, 2006, pp. 215-216)

As noted in the beginning of this thesis, Meyer (1957) describes this as cultural noise, informed by cultural distance. This thesis elaborates on this observation and suggests that, in this instance, Huron, as the culturally distant listener, perceived the music being sung as a lullaby because of his stereotyping of the condition "under a dark sky". The reason for his conclusion may be a combination of the following cultural noise: (1) the exoticisation of Indigenous musical cultures, (2) that generally lullabies are sung at night and (3) the stereotyping of Dakota traditional music as being spiritual in its origins and intentions. It is uncommon, at least from a western culture perspective, for spiritual music to be associated with stealing. While this example does not focus on emotion perception, it is in harmony with the STEM explanation described in this thesis. It illustrates the extent to which stereotyping informs the perceived meaning of music for a listener. While directly concerning music and emotion only, the theory proposed in this thesis may also serve to enhance understandings of how, more broadly, the meaning of music is perceived.

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