

Journal of New Music Research

ISSN: 0929-8215 (Print) 1744-5027 (Online) Journal homepage: www.tandfonline.com/journals/nnmr20

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To cite this article: Peter J. Varga & Brian Parkinson (2024) Mechanisms of musical emotion transfer: insights from 22 composers and the musicological and psychological literature, Journal of New Music Research, 53:5, 383-398, DOI: 10.1080/09298215.2025.2481852

To link to this article: https://doi.org/10.1080/09298215.2025.2481852

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JOURNAL OF NEW MUSIC RESEARCH
2024, VOL. 53, NO. 5, 383–398
https://doi.org/10.1080/09298215.2025.2481852

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Mechanisms of musical emotion transfer: insights from 22 composers and the musicological and psychological literature

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ABSTRACT

Much psychological and musicological literature has been dedicated to the affective experience of music listeners, but considerably less attention has been given to the role of composers and their intentions in the process of conveying emotion in music. The present qualitative study sought to address this gap in the literature by seeking the perspective of composers in semi-structured interviews that probed their engagement with emotion during composition, the practical considerations shaping their deployment of musical elements, and their manipulation of those elements at a technical level to achieve the desired effects. We used flexible coding within a grounded theory approach to analyse a dataset of 22 in-depth interviews. Results showed that while contemporary composers predominantly conceived of their work in terms consistent with a primarily Western classical idiom, they differed considerably in their use of distinct musical elements to evoke affective responses in listeners, their approaches to listening to music qua composer versus qua listener, and the practical ways in which they differentiated affective reactions and cognitive emotion perceptions.

ARTICLE HISTORY
Received 18 December 2023
Accepted 15 March 2025

KEYWORDS
Composition; emotion; creativity; music psychology; musical elements

Most people listen to music expecting to be 'moved' by what they hear (Simonton, 2010). The notion of a musical work as a vehicle for emotional transmission accounts for much of the music industry's cultural and economic success (Lull, 1992; National Assembly of State Arts Agencies, 2020). Yet the focus of research into this phenomenon has almost entirely neglected the role of the composer in this process (Impett, 2016; Sloboda, 1999). To address this gap in the empirical literature from a social-psychological perspective of interpersonal emotion transfer (Parkinson, 2011), we propose that it is vital to investigate music as a transmissive medium by which the affective states of a composer can be conveyed meaningfully to a listener in the absence of direct interaction between the two parties. We begin this investigation with the present qualitative interview study, in which we ask composers how they engage with emotion during the composition process, developing themes raised by philosophical, musicological, and psychological theories in the literature. Our overall aim is to understand better the role of the composer as a communicative agent within a social model of musical emotions.

Musical transmission of emotion broadly describes phenomena where affective content is conveyed (e.g. by expression, representation, portrayal) via music from the composer and received (i.e. either perceived or experienced) by the listener. In the present study, we focus on a type of transmission that we call 'musical emotion transfer' (MET), which describes the phenomenon whereby composers *express* (rather than portray) their felt or intended emotions in music, and listeners *respond* to that music with a corresponding emotional experience. We distinguish MET from other transmission phenomena – such as communication, which necessarily involves an intention to produce affective meaning that is recognised by the recipient – whilst still framing the present research in the broader context of the transmission of affective content following Juslin (2005) in considering both perception and induction. In other words, MET is principally concerned with describing the expressive mechanism proper to the evocation and induction of composers' felt and intended emotions in listeners whilst differentiating the 'locus' (Merrill et al., 2020) of felt and perceived emotions.

When considering a social psychological model of MET, however, it is important to note that music differs from typical social interaction in a number of critical ways. In direct face-to-face interaction, one might pick up on emotion cues from someone else's smile or frown, their gaze or lip movement when speaking, the furrow of

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/09298215.2025.2481852.

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their brow or the wrinkling of their nose. The information extracted from such cues is enhanced by contextual knowledge, such as how well they are known to the recipient of their expression, what is attracting their attention, and what can be inferred about their perspective and action trajectory. These emotion cues might be experienced by the recipient by a contagion process of innate spontaneous mimicry of the agent's expressions or by synchronisation of movement or behaviour or by relation alignment facilitated by an automatic appraisal process involving perceiving, evaluating, and interpreting the emotion expression visually (Parkinson, 2019).

On the other hand, music is an especially clear example of a medium in which the recipient is typically unknown to the agent (despite the nature of audience fan bases becoming clearer with time and artist success). Moreover, like other forms of indirect and asynchronous communication from road rage (Parkinson, 2001) to technology-facilitated platforms such as telephone and video conferencing (Parkinson & Lea, 2011), the basic model of social interaction needs to be adjusted to widen the frame of reference. Similar arts-mediated emotion transmission paradigms have been proposed and empirically tested in creative writing (Thrash et al., 2010, 2017) and visual art (Pelowski et al., 2020), but not yet with music in a truly social paradigm. Instead, research has thus far typically relied on consensual self-report and observational biometric data and focused only on listener responses to musical stimuli (e.g. Becker, 2004; Hirokawa & Ohira, 2003; Juslin et al., 2008; Juslin & Laukka, 2004; Menon & Levitin, 2005; Thompson, 2006; Vuoskoski et al., 2012, 2017; Zentner & Kagan, 1996, 1998).

This gap in the literature is ripe for exploration, but the lack of empirical precedent also makes direct quantitative enquiry difficult. A small number of studies have used historiometric, interview, or case study methods (e.g. Cochrane, 2013; Douek, 2013; Simonton, 2010) to explore related issues. None of them, however, has paid sufficient attention to composers' views on the emotional expressivity of music, the relative importance of moving listeners, and the musical elements that can achieve these effects. The difficulty is compounded by disagreement amongst composition theorists, musicologists, and psychologists about the nature of emotion and meaning in music (Meyer, 2008), especially in light of the suggestion that the aesthetic appraisals at the core of many of these debates might be quite different in music from those in other arts disciplines (Zangwill, 2022). To begin overcoming these challenges, we conducted the present qualitative investigation of composers' techniques and processes with the aim of hearing directly from composers whether and how they engage (with) emotion in their creative work and how they intend to influence listeners' emotions.

In the following section of this Introduction, we review relevant literature, beginning with perspectives on composition from musicology, distinguishing previous writers who have endorsed the emotional expressivity of music from those who have not. The next section argues that a psychological perspective helps bridge historical approaches and modern empirical methodologies but still leaves major theoretical questions unaddressed. To help facilitate a synthesis, the final section briefly outlines the most commonly accepted elements of music that might play a mediating role in MET between composer and listener via original compositions. This literature review lays the groundwork for delving into the empirical data gathered from conversations with composers themselves.

1.1. Perspectives from musicology

Meyer (2008) helpfully framed the divisions in musicological theory in terms of two distinctions. The first is between composers who operate under the premise that music can express emotion ('expressionists') and those who favour an intellectual aesthetic appreciation of musical form ('formalists') in its own autonomous terms – akin to what has become the cognitive theory of emotion in music (Cook & Dibben, 2001; Davies, 2001; Kivy, 1989, 1993). The second distinction addresses the question of whether composers view emotion as arising directly from acoustical qualities ('absolutists') or from external associations those qualities elicit ('referentialists'). Whilst formalist composers in the strictest sense should also be absolutists (as the focus is purely on the intrinsic formal content), it might be possible for formalists to remain committed to this ideal and also reference content external to their composition by use of quotation or appealing to historical musical tradition. An expressionist composer might more easily be either absolutist or referentialist.

The appeal to historical tradition is also characteristic of semiotic theories of emotional meaning in music. These theories argue that music is a socially meaningful medium 'similar to language' rather than merely a self-referential abstraction (Adorno, 2002, p. 113). Consequently, emotional content is conveyed by culturally determined syntactic types and tropes that are decoded in specific performance contexts understood by contemporary audiences (Cook & Dibben, 2001). These representational approaches rely on inferences and appraisals about emotional content which depend on composers' deployment of musical elements such as melody, harmony, metre, rhythm, and form, as well as listeners'

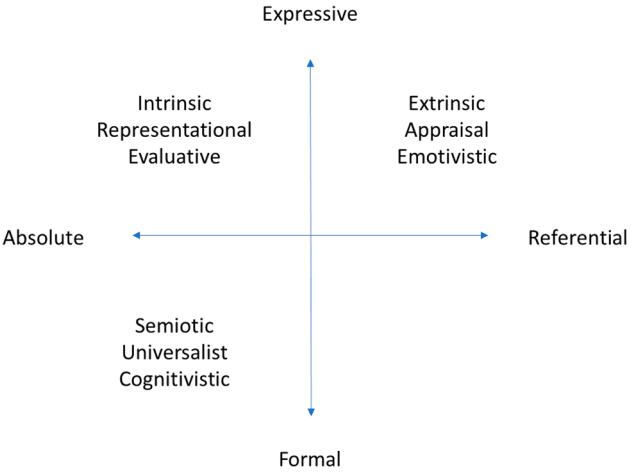

Figure 1. *Plot depicting different frameworks for approaching affect in music.*

Note. Axes represent dimensions of traditional musicological divide over emotional content in music; quadrants organise different frameworks for approaching affect in musical composition according to those dimensions.

sensitivity to them (Juslin & Sloboda, 2001). In this sense, music represents affective realities in much the same way as verbal communication.

Semantic and representational approaches can be further contrasted with frameworks in which emotional qualities are 'read directly' from acoustic qualities of music, possibly by brain stem reflexes to sound or as a consequence of biorhythmic entrainment (Juslin, 2013). This 'universalist' reductionism (Meyer, 2008, p. 5) is related to, but distinguishable from, absolutism in its focus on basic features of the acoustic envelope rather than the higher-order gestalt within which emotional content is perceived. Figure 1 visually plots how these different frameworks relate to each other and to other common approaches to understanding the place of emotion in music.

Partly in response to what they saw as overstated referential expressionism, formalist practitioners and theorists such as Igor Stravinsky (1975), Arnold Schoenberg (1984), and Eduard Hanslick (1986) rejected the relevance of considering any specific emotional representations in music, so the building blocks of musical syntax took on increased significance. Whilst they were not thought to convey any particular (referential) meaning, these core elements were still located on dimensions of relation such as melody (the 'horizontal' succession of pitches), harmony (the 'vertical' texture of pitches under the melody), and rhythm (the relative 'temporal' occurrence of pitches), suggesting a common language (at least within the Western Classical tradition) through which composers and researchers can communicate.

1.2. Perspectives from psychology

The musicological distinctions presented so far are helpful organisational heuristics for categorising and coding different composers' approaches to emotion in music, but the concepts they distinguish are far from mutually exclusive. Just as in poetry or visual art (Omigie, 2015), both absolute and referential meanings are present and perceived in music, as are the affective responses they elicit in a listener (Meyer, 2008). Psychology, however, offers additional means for distinguishing between compositional approaches that seek to convey some specific, if complex, emotions (e.g. the bittersweet pleasure of melancholy; Cain, 2022; Grüning et al., 2023; Vuoskoski et al., 2012) and that seek to be liked by an audience (e.g. by being generically pleasurable; Langer, 1958; Meyer, 2008; cf. al-Fārābī, 1998; Augustine, 2017; Plato, 1992). Analogously to creative writing, activated positive affect (i.e. state experience of increased happiness, wellbeing, self-esteem, etc.) is easily triggered by reward salience (i.e. when a desired object becomes a focal consideration, e.g. through wanting or liking), but higher affective states (e.g. inspiration, awe) require some transcendent trigger, such as the illumination or enlightenment accompanying mystical experiences or the motivational impetus of transmission found in disseminating scientific findings or preaching religious revelation (Thrash, 2021; Thrash & Elliot, 2004; Varga, 2021). This interplay implies potential differences between the compositional approach and the listener's perception and appraisal of emotional meaning for any given work of music, particularly when evaluating both technical mechanics and psychological aesthetic value (Clarke, 2011; Juslin & Laukka, 2004; Merrill et al., 2020; Timmers, 2017). In other words, responding to music may not be the same for composers and listeners.

Composers and composition teachers have built up centuries of literature on the art of composition, most of which seems predicated on the power of music to elicit an emotional response (Meyer, 2008). What remains unclear, however, is what that emotional response is. Historically, many theorists have only entered the realm of empirical aesthetics and experimental psychology via descriptive exploration of sensation, perception, and their ability to arouse the perceiver (e.g. Berlyne, 1971; James, 1884). Within the musical context, the classic early psychological theories of emotion in music composition began with the premise that music is simply a pleasurable arrangement of auditory inputs (Helmholtz, 1954; Langer, 1958). Synthesising these findings with the current music psychological literature, subsequent researchers have attempted to add further explanatory clarity to investigations of how emotional responses in listeners are evoked (e.g. Juslin, 2019; Scherer &

Coutinho, 2013; Timmers, 2017). Mirroring the multiplicity of emotion theories more generally (see Moors, 2022 for a review), psychological theories of musical emotions have proliferated in recent years (e.g. Cespedes-Guevara, 2023; Cespedes-Guevara & Eerola, 2018; Juslin, 2013; Juslin & Laukka, 2003; Scherer & Zentner, 2001), but a unified or consensual framework is yet to emerge (see Lennie & Eerola, 2022 for a review and sceptical proposal).

Consistent with Berlyne's (1960) observation that novel art is interesting because it fosters curiosity via conflict and uncertainty between competing categories and interpretations, some psychologists have proposed that manipulation of the element of surprise and the disparity between expectation and experience is one mechanism composers use to influence emotional responses (Huron, 2006; Huron & Margulis, 2009; Steinbeis et al., 2006). Though simple surprise does not require an understanding of representational musical elements, extensions of the expectation approach note that individual listeners' experiences vary based on differences in the ability to translate between feeling and understanding. For example, a given listener might be able to detect a wrong note in a performance on the basis of a simple 'feel' but might otherwise lack the musical understanding to identify the precise nature of the error (Podlipniak, 2022). This distinction is subtly different from the contrast between musical expression of emotion and musical elicitation of emotion, which roughly translates to listener perception (the cognitivistic modality) and listener feeling (the emotivistic modality), respectively (Kivy, 1989; Scherer & Zentner, 2001; see Figure 1). These modalities, moreover, have empirically differentiable effects on listeners' qualitative and psychophysiological experiences of music (Merrill et al., 2020). Instead, the differences between surprise-based feelings and familiarity-based understanding play into the question of whether certain affective states are simply ingrained preferences for historically-informed associations of specific musical elements and motifs rather than intrinsically affective or intellectually appreciated aesthetic qualities of the music.

Subsequent research has suggested that these qualities interact with the listener and their context (Juslin, 2019). As in constructionist theories of emotion (e.g. Barrett, 2018), automatic perceptions of music combine with responses to the personal and sociocultural context to make the listening experience personally relevant and distinctly emotional (Cespedes-Guevara, 2023). Some researchers devote particular attention to listeners' goal-related appraisals (Lennie & Eerola, 2022), but, as Juslin (2005) points out, standard appraisal paradigms (e.g. Oatley, 1992) are insufficient because music does not directly advance or impair goals, meaning that other explanatory mechanisms are needed. These include the influence of personal context on associative mechanisms such as idiosyncratic mental imagery or associations between music and experience (Cespedes-Guevara, 2023; Juslin, 2005).

However, these lines of enquiry have led psychologists to primarily examine listener emotional responses rather than investigate composer intentions directly. Prior research has, for example, yielded insights into harmonic preferences for consonance (Meyer, 2001; Scherer & Zentner, 2001) even from infancy (Zentner & Kagan, 1996, 1998) and associations of music-induced emotions with acoustic qualities such as tempo, mode, loudness, pitch range, scalar intervals between pitches, articulation, and amplitude envelope (Gabrielsson & Lindström, 2001). These functional factors are the more granular bases for elements traditionally defined by music theorists in terms of melody, harmony, tonality, rhythm, and timbre. As the tools in the composer's kit, each of these potentially represents an opportunity to express nuanced and complex emotions, but the relationship between the combination of these factors and the way composers and listeners engage with them (in potentially different ways) remains to be studied.

1.3. Systematic approach

Despite differing views on whether emotion is communicated in music, what constitutes meaningful affective responses to music, and by what processes those responses are communicated or elicited, there seem to be many points of agreement amongst composition theorists and music psychologists about the notion that composers do affect listeners' perceptions and experiences of emotions through their music, though disagreement remains about the mechanism and kind of phenomenon, such as whether it is through direct expression, more disinterested aesthetic appreciation of form, or listener-specific context (Cespedes-Guevara, 2023; Juslin, 2005, 2019; Meyer, 2008). Empirical investigations have demonstrated that the musical elements used in composition and interpretation are effective emotion cues for listeners (e.g. Quinto et al., 2014; Simonton, 2010), but research has also shown that the emotions listeners perceive and experience are complex and heterogenous (Cespedes-Guevara & Eerola, 2018) and that the ways in which listeners engage with music and its associated emotions are diverse and dependent on personal, social, and socio-cultural appraisals (Lennie & Eerola, 2022; Timmers, 2017). We still know considerably less, however, about how composers experience the creative process when it comes to their own engagement with emotion in music. What we do have for reference

are the musical elements used to describe the building blocks of composers' (rather than performers') work and how they affect listeners' emotional perceptions and experiences (Cespedes-Guevara & Eerola, 2018; Juslin & Laukka, 2003).

Thus, a synthesis of the musicological perspectives on composition and psychological perspectives on music's emotional effects provides a broad framework that is capable of covering the aesthetic and affective elements of music. Though informed by aesthetic theory (e.g. Burke, 1757; Collingwood, 1938), the analysis of composition also involves many more technical aspects that cannot be easily translated from other arts disciplines (Scruton, 1983a; Zangwill, 2022). We therefore also drew on established concepts in the academic domains of musicianship, composition, and music theory. Including those elements identified as core dimensions of music – especially those investigated in previous psychological studies (e.g. Gabrielsson & Lindström, 2001) – alongside more interdisciplinary aesthetic features allows for more detailed discussion and future empirical testing of specific elements and helps to overcome doubts raised about the applicability of predominantly literary aesthetic theory to music (Zangwill, 2022). In some of the schemata included here, aesthetic philosophers and music theorists explicitly offered their own dimensional frameworks of musical perception (e.g. melody, rhythm, and harmony; Scruton, 1983b). We thus adopted a conceptual framework labelled according to conventional music-theoretical core elements of composition comprised of more granular psychoacoustical factors, along with techniques for manipulating them.

Melody represents the 'horizontal' progression of notes over time, marking out the syntax and contour of the musical phrase by their grouping. More technically, melody has been defined as the arrangement of pitched sounds in musical time in accordance with cultural conventions and constraints (Ringer, 2001).

Harmony represents the 'vertical' relationship of notes, setting the acoustic context by drawing out certain resonances over others. Scalar sets of related pitches (often defined by the successive intervallic relationships between adjacent pitches in a scale) can be classified as distinguishable *modes* or identifiable parameters of *tonality*, though harmony is technically the combination of notes sounding together simultaneously and successively (Cohn et al., 2001). It can also denote the culturally constrained systems by which such combinations are governed and analysed.

Rhythm represents the regulation of the succession of strong and weak elements (London, 2001; 'Rhythm, n.', 2022). Relatedly, *tempo* is the relative speed at which that regulated pattern is produced.

Dynamics represent the intensity of volume (amplitude) with which notes and sounds are expressed (Thiemel, 2001). Relatedly, in the Western Classical tradition, particularly from the twentieth century onwards, dynamics are seen as a fundamental parameter of *expression*.

Timbre describes the tonal quality of sound (Campbell, 2001). It is thus intrinsically related to *instrumentation* and *orchestration* as different instruments sounding the same note produce different tonal qualities.

Structure (or **form**) denotes the constructive and organising element of music (Whittall, 2001). In this way, it is the synthesis of tonal, sectional, and cadential organisation, ordering, and development of musical ideas in time (Webster, 2001), inclusive of basic units of *phrasing*.

1.4. The present study

To begin addressing questions about the role of composers and their use of specific musical elements in light of broader music-theoretical and psychological contexts, we crafted interview prompts and the above a priori list of core representational (i.e. descriptive) musical elements that composers might manipulate to create emotional effects in their listeners. We used previous psychological investigations of core musical factors (e.g. Gabrielsson & Lindström, 2001) and the above outlined aspects of composition theory and practice concerning the elicitation of emotion, impression of mood, and the conveyance of meaning in music as taught in the Western Classical tradition.

Working from the consensual nomenclature of musicologists and psychologists, and informed by the points of disagreement in its application, our approach to identifying and labelling potential mediators of the effect of music on listeners' emotions drew on each of these sources in turn. Informed also by the first author's training in composition, we attempted to synthesise a coherent interview guide from which to speak to composers about the role of affective states in their creative processes. In defining this preliminary guide, the musicological and psychological literatures proved to be rich sources from which to supplement conventions of music theory.

Theory, however, can drift very far from practice. As noted in discussions of musical form and its evolution, practice particularises and theory generalises; research that attempts to integrate both is especially vulnerable to the tensions that arise from these divergent ways of thinking (Whittall, 2001). Thus recognising the complex and often contentious academic discourse surrounding the question of emotion and meaning in music via the contributions of theorists, philosophers, and psychologists,

we set out to interview composers from a variety of backgrounds to understand better how they actually engage with affect in their day-to-day work. Though informed by the general musicological literature, the lack of specific empirical precedent meant this study was predominantly exploratory in nature, with themes emerging from the data as analysed, consistent with a grounded theory approach.

2. Method

2.1. Participants and procedure

Weobtained qualitative data both from interviews conducted by the first author and analysis of historical interviews. We identified composers through professional contacts and invited them to speak about their work process using a semi-structured approach. We arranged these interviews and obtained informed consent via email invitation and an online booking form. We asked interviewees about their creative process broadly and about whether and how (if so) they attempt to convey emotional meaning in their music. We also asked them about how they engage with and affectively respond to other composers' music and what ways they might evaluate other composers' work, particularly with respect to those affective elements. All interviews took place on Microsoft Teams and were recorded and transcribed by the first author. The sample of interviewees ($n = 15$) included 3 women and 12 men from 6 countries (the UK, the USA, Canada, Finland, Germany, and Haiti) with an age range of 21–84 years ($M = 35.5$, $SD = 18.78$).[1] Ten composers described composition or film scoring as their primary professional vocation, whilst five indicated it was a secondary profession to performance ($n = 3$) or teaching ($n = 2$). The majority ($n = 11$) described themselves as writing primarily contemporary Western classical art music though two indicated they were as active in traditional music of other cultures. Four others specified Western sacred music as their primary genre. One participant primarily worked in film scoring, and three others mentioned some scoring experience. Participation was limited to those who had received formal musical training at the conservatory or university level and who did not exclusively work with lyrics-based music.

In addition to the live interviews that the first author conducted personally, he reviewed transcripts of seven additional interviews from a larger collection (Schafer, 1963) of historical interviews (HI). All of these interviews were conducted in the UK with established male professional composers ranging in age from 57 to 82 years ($M = 65.4$, $SD = 9.85$). Though the interviews did not exclusively address questions of music and emotion, they all included discussion topics relevantly overlapping with our questions of interest. The final sample was thus comprised of the combination of these two qualitative datasets ($N = 22$).

[1] Not all participants consented to provide their age, so these descriptives are calculated based only on the data provided.

2.2. Interview questions

The open-ended interview prompts included questions about each composer's background, experiences of emotion in music, and process of engaging with affect (if at all) as well as questions about how they listen to and evaluate their own and others' music. The full set of possible questions used in the semi-structured interviews can be found in Appendix A.

2.3. Coding

Informed by the grounded theory approach and implementing elements of Deterding and Waters's (2021) modernised 'flexible coding' method, we classified themes (i.e. core musical elements and evaluative considerations) derived from musicological convention and confirmed in the interviews in a two-step coding procedure. First, index codes were created based on expected topics, techniques, and considerations found in the musicology literature, often aligning with specific elements of music. These codes were applied to relevant excerpts of the interview transcripts, yielding quotations that stood out as particularly representative of the topic. Analytical codes were then developed to correspond specifically to the evocation and communication of emotion in music (e.g. references to programmatic, atmospheric, affecting techniques or examples). The analytical codes were applied to the qualitative data and their correct application was subsequently reviewed for consistency throughout the interview coding process. Examples demonstrating the application of codes can be found in Appendix B.

3. Results

The following results are organised into subsections around the major themes that emerged from the interviews employing the consensual standardised coding terms taken from the interdisciplinary literature on emotion in music as defined above. These themes broadly address questions about whether and how composers engage with emotion in their work as well as the relative importance they place on this with respect to their intentions for listeners' perceptions and experiences. We also explore secondary, emergent themes, such as cross-cultural differences in the above, composers' differing

Table 1. Examples of coding references to musical elements influencing affect.

Index Code	Analytical Code	Applications	Freq.
Affective states influenced by:	Melody	US_02: You know, if you're having a yearning melody, maybe there's an octave in the first, you know, 2 opening notes of the piece.	34
	Harmony	UK_01: Traditional explanations of emotive content and music tended to focus on mode and tonality. UK_04: I do think that whatever the harmony is is gonna also be a big part of that	38
	Rhythm	FI_01: The Bach G minor violin suite starts on that G minor chord on the downbeat. Or if that chord were to come back later and be on an off beat, it's the same chord. It's the same gesture that the violinist is making, but its metric position changes its emotional quality as well.	38
	Timbre	UK_01: the way that you present an idea, the way that you orchestrate an idea can have an immense effect on upon that idea. UK_01: texture is … would be one of the most important elements in music, that is one of the least discussed. UK_04: tone is huge.	9
	Structure, Form	HI_01: I think music ought to express some kind of emotion. Bach had tremendous skill and he was able to express the greatest emotions in the strictest forms. US_04: above all of that I think there's the beauty of details, but there's also the beauty of the whole impression. So balancing that, which is really form, is also a critically important thing	16
	Combination of elements	FI_01: the interplay between rhythm and harmony is very important US_02: Usually [when listening] it's melody and then its harmony, and then it's orchestration. US_05: there's other arguments or other elements of music: people have put in development as an element of music. John Cage was an advocate that the only element of music that mattered was duration.	10

Note: Freq. = number of discrete mentions of code content; HI = Historical Interview, CA = Canada, DE = Germany, FI = Finland, HT = Haiti, UK = United Kingdom, US = United States.

views on the role of aptitude and talent in communicating emotion, and differences in how composers write versus listen to music.

The majority of interviewees ($n = 20$) placed themselves in the expressionist category; only two rejected the notion that music expresses specific emotional meaning. Based on a systematic review of the coded qualitative data collected, most composers converged around the same terms for musical evaluation (of technical mastery and mechanics) and psychological appraisal (of sources, points of reference, and frameworks for assessing affective, moral, or aesthetic impact) when describing musical elements and techniques associated with affect. Harmony and rhythm were mentioned as a critical element of conveying affect 38 times each, melody was mentioned 34 times, structure was discussed in 16 cases, and timbre in only 9. Despite long being held in the musicological literature to be vital, dynamics, as musical affective expression, was mentioned in only one instance. (See all frequencies in Table 1.) The relative frequency with which composers employed these musical elements, however, was not necessarily directly related to the ways in which they engaged with each aspect or approach.

In addition to the foregoing musicological terms, different approaches to composition and evaluation emerged from our interviews. We have categorised these thematically as intellectual (based on logic, systems, and analysis), historical (based on convention and tradition or a response thereto), and intuitive (based on musical instinct, feeling, or flow) approaches. Intellectual approaches to composition were described in four cases, and historical and intuitive approaches were described in five cases each. Below and in Table 1 are representative examples of interview data. More extensive examples for each code can be found in Appendix B of the Supplementary Materials.

3.1. General compositional approaches

Intellectual considerations focused primarily on the translation of abstract concepts into recognisable musical materials. They had to do with musical experiences that both aided and were aided by 'enlightenment' (cf. Adorno, 1989, p. 15) or similar cognitive states, such as insight or epiphany. Composers spoke about undifferentiated first impressions and ideas giving way to intellectual understanding (e.g. HI_02) as well as their desire to produce non-derivative but still 'intelligible' compositions (US_04). These considerations were primarily associated with the formalist appreciation of structure but were also related to referential approaches to representation and listeners' affective experiences. Composers also described this approach in terms of reasoning through how to practically express ideas musically, working methodically until they had intellectual 'reason to believe that *this* theme expresses *this* idea' (US_05). The

same American composer just quoted gave the following example of his creative process: 'I'm trying to express something that is broken or divided, so I need a theme that feels broken or divided . . . . I could have this theme use a scale that is half in one place and half in another place. These two places are misaligned. This is a way of generating that idea on an intellectual level' (US_05). Similar examples were given by several composers (e.g. UK_05).

Historical considerations were primarily concerned with questions of form and structure as well as culturally informed associations of sounds with meaning and emotion. These considerations were encoded by syntactic processes that are culturally circumscribed and thus historically informed (Meyer, 2001, p. 345). As such, musical emotional stimuli in this context were described as more likely to be appraised according to external standards of historical norms and cultural values (Kenyon, 1988; Scherer & Zentner, 2001). This approach involved composers explicitly looking to historical examples of expressing a given idea (e.g. US_05) whilst also recognising that all commonly used musical 'forms are the courses that music takes under the impact of sociological and cultural forces' over time (HI_04). They also noted that the historically-informed evaluation of music is constantly updating. For example, a Haitian composer observed that 'right now, because of the evolution of music that you can listen to music all over the place, you get a different understanding of what makes something better than the other one' and that this process interacts with cultural norms and cross-cultural contact as well (HT_01).

Intuitive considerations had to do with gut feelings of 'emergent appreciation' (Varga, 2021). They were similar to the process described by Adorno (1989) by which music 'trains the unconscious conditioned reflexes' (p. 53) and personal values used in appraisal (Farnsworth, 1958; Scherer & Zentner, 2001) or more primitive, unconditioned responses (Meyer, 2001). As an example of this, a German respondent recommended that composers 'should just go purely on instinct and capture the emotion' (DE_01). Others endorsed similar strategies, even when asked explicitly about formal evaluation of compositions, because 'most people are responding to it [a composition] in a matter of preference' (US_05), even whilst many endorsed having an intuitive sense for when composer expression is 'done well, when you have this feeling of the composer knowing what they're saying, and that they have absolute control over all of the elements and what they're trying to do' (US_7). Most composers also referenced an intuitive sense of when a work was complete or achieving the desired effect (e.g. US_05, US_06), when 'things just kind of click into place' (US_03).

3.2. Presence and place of emotion in music

Not all composers described their process as intentionally engaging any methods for portraying or eliciting emotion. For example, one American composer (US_01) observed that it was more about physical experiences than intellectual or affective experiences, going on to say, 'I don't know that I feel any in my own music, any emotion'. Another composer (US_06) similarly commented, 'I don't really try and convey emotion'. A few composers explicitly addressed the divisions between referential and absolute approaches as they relate to expressionism and formalism (e.g. 'sometimes that's evoked through meaning outside of music. . . . and sometimes it's in terms of within work structurally' [US_05]). The interviewees mostly took differing approaches when utilising musical elements associated with emotion.

Even amongst the expressionist-type composers, a varied discussion of the ability to write evocative music emerged, particularly in relation to whether such skill is derived from intuition, intellectual exertion, or mastery of historical techniques and devices. These discussions provide more explicit insight into questions of locus or 'where' emotion exists in the composer's work and the connection between the ability to evoke emotion and technical mastery. For example, on the topic of the role of talent or craftsmanship, some composers viewed the ability to convey emotion as a learned skill (e.g. 'I guess it's having a background and wanting to do something and then acquiring skill to do it' [US_01]) and others attributed it all to individual differences and natural talent (e.g. 'It's almost like if someone is born as an actor, and then just has talent, they can act. I think it's a similar talent.' [DE_01]), suggesting that producing expressive music is not solely based on technical mastery of representational musical elements.

Unlike current trends in modern philosophies of music, all but the two 'formalist' composers suggested that the value of a piece of music is tied, at least in part, to its ability to express emotion or evoke emotional responses in the listener. Citing an example from a Mozart opera, one composer (UK_01) said,

> It's a very, on the surface, a very simple melody. And yet the expressive power, even outside its dramatic context of that piece is incredible. And to understand those two things on the one hand, I mean, there's an elegant simplicity in the writing, and of course, as a composer I don't underestimate the skill that's needed to achieve that, so I can admire that.

Another (HI_01), referencing Bach said, 'I think music ought to express some kind of emotion. Bach had tremendous skill and he was able to express the greatest emotions in the strictest forms.' Interestingly, even

the formalist composers who said they did not set out to convey emotion in their music reported its importance: 'Granted, I do believe that if my work doesn't at least provide some … provoke some sort of emotional reaction in myself, then it's probably not … I probably shouldn't write it' (US_06).

In many interviews, composers initially talked in the abstract about portraying different basic emotions using broad associations (e.g. 'sad, minor key slow' [US_03]). In one interview, the composer spoke at length about the process of 'trying to translate' from a physical object of inspiration into musical 'descriptors for it … with the intention of Mood needing to be portrayed' (UK_04). When pressed for more specific details, however, composers often turned these discussions towards more complex emotional *experiences* they wanted their listeners to share in terms of feeling and evocation rather than of translation or portrayal. Though still using the basic elements of music to describe these processes (e.g. 'How does a rhythm feel X?' or 'somehow this rhythm evoked Y' [FI_01]), composers often recognised that they had multiple methods of evoking complex emotions at their disposal depending on the specific composition. Mostly, composers reported using more complicated compositional techniques and the layered manipulation of several musical elements for this purpose. For example, another composer (US_08) described carefully planning the intersection of instrumentation, timbre, dynamics, and melody to ensure his listeners felt the kind of emotional response he intended. Although each composer apparently used a variety of strategies, few of them took a clear stance on whether they predominantly viewed their work as portraying specific emotions or attempting to induce them in listeners.

A notable exception to this trend, those composers with film scoring experience described a much more functionalist view of their work wherein the entire goal was to induce specific, often complex emotions in their listeners, albeit in tandem with a visual component. Like other composers, they discussed the challenge of 'acting as a translator' (US_02) between an external object and the affective world of music, but saw this process as much more targeted. One composer (US_02) recalled thinking at the start of composing a scene in a film score that 'there are lots of avenues I could go down to make something sound scary' but went on to discuss the challenges of capturing just the right sound world for the specific scene at hand after much 'experimenting and seeing what fits with what the director wants'. Perhaps unsurprisingly, those composers who worked with film were the most interested in how accurately their intended emotions were experienced by the listener. An enduring question for many (e.g. US_02, US_08) is whether they could reliably tap into culturally informed musical emotive tropes by the manipulation of specific musical elements.

3.3. Musical elements

As anticipated from disagreements in the literature (cf. Cespedes-Guevara & Eerola, 2018; Juslin, 2013), instances of interviewee agreement on the basic musical building blocks of affectivity in music did not equate to all composers endorsing the same musical elements or deploying the same techniques in the same way. For example, various composers gave entirely different accounts of the musical elements they prioritise and prefer: 'the interplay between rhythm and harmony is very important' (FI_01), 'Usually it's melody and then its harmony, and then it's orchestration' (US_02), 'First and foremost would be the harmonic structure of the piece' (US_04), 'texture is … would be one of the most important elements in music, that is one of the least discussed' (UK_01), and 'tone is huge' (UK_04). Which representational musical elements composers deployed and manipulated to evoke specific emotions also varied considerably across composers and compositions. One composer (US_02) discussed manipulating orchestration and timbre outside standard performance practice to create a feeling of unease, another spoke about trying to emulate a Schubert Lied in a minor key that ends in the major 'and it's the saddest thing ever' (DE_01), whilst a third described working with tempo to convey a sense of quiet and calm contentment (UK_04). Similarly, in describing their respective overall approaches to conveying emotion when starting a new composition, different composers variously reported: 'it very much largely starts in orchestration before a melody comes in, before harmony comes in. That's how I kind of approach it' (US_02), 'my first drafts look like a melody with jazz chords and some basslines written in' (DE_01), and 'I think harmonically' (US_04). Though all composers acknowledged the fundamental importance of concepts such as melody and harmony, some suggested their styles transcended those typical elements, with one reporting, 'If I'm being honest, I don't really think much in terms of harmony or melody these days, just 'cause of the kind of my own interests' (US_06). Despite these variations in which musical elements were prioritised, it is notable that even the most experimental composers still spoke about their processes using standard Western classical terms.

That consistency dovetails with the question of whether affective responses are simply culturally conditioned associations. For one composer, these associations are all about instrumentation and melody working together in ways audiences are used to hearing at particularly emotional moments in cultural contexts, such

as movies (US_08). The same composer later described picking up on these musical tropes as a critical listener, and then being able to easily imagine how they could be applied to achieve the standard effect:

> when I'm imagining this really emotional moment in a movie I'm imagining like, really— full, you know, strings and, you know, probably violins up really high. And it's the, you know, this big, like swell type of moment, probably some kind of soaring melody

Another composer suggested that the reason certain motifs and gestures have become so closely associated with certain emotions could be because 'some elements of music are better at [conveying specific emotions] than others. If we have rhythm and we're trying to evoke feelings of sadness, turns out that's a little bit harder. But it is possible … slow funeral march rhythms will frequently evoke feelings of sadness via cultural associations or musical or artistic associations' (US_05). But, as noted in the anecdote from the composer who experienced coldness in response to a rhythm, at least some affective responses to music are not interpreted or evaluated via explicit culture-specific associations. For one American film scorer (US_02), the associations exist – 'We all know what scary sounds like; we all know what happy sounds like,' she said – but that does not mean composers only stay within the limited scope of cliché soundscapes. In one example, she used timbre and texture specifically in unusual ways:

> I used human voices and kind of, you know, alternated the EQ and try to just make it sound very unhuman-like, if that makes sense, and I actually use a sound library of whale sounds as well to get a very unsettling boom sound.

Building on similar ideas, other composers also opened up the possibility of considering the intrinsic affective content of sound (i.e. automatic affective responses to acoustical properties) as well as the roles of intellectual appraisal (e.g. functional analysis) and culturally conditioned responses (e.g. working within or in response to tradition) that are also dependent on the listener's context.

Whilst a review of the literature examining listener perspectives helped inform the interview prompts and response codes, it also highlighted differences between the ways composers approach emotion in their work and the ways that listeners might later perceive it. For example, whilst Gabrielsson and Lindström (2001) found that tempo was usually considered the most important factor affecting listeners' perception of emotional expression, none of our composer interviewees singled it out. Aside from a Haitian composer (HT_01) who spoke about the relative foregrounding of rhythm in African and Asian music compared with Western music, only one other interviewee, a composer in Finland (FI_01), mentioned rhythm and tempo as the most important factors in setting the emotional scene of a piece and only in conjunction with harmony. Another interviewee qualified, 'rhythm is the thing that the performer thinks about most despite, I think, its secondary place in the order of musical being. I think rhythm is second. However, it doesn't function – cannot function without the harmony, and the harmony actually can't move forward without rhythm' (US_04). Instead, the majority of participants (e.g. UK_01, US_02, US_03, US_04, US_05) identified melody or harmony as the most critical contributor to emotion expression and perception from the composer perspective, but several also pointed out they would prioritise elements differently from the listener perspective.

3.4. Composing versus listening

Composers drew nuanced distinctions between how they approach composition and how they listen to others' music. For example, the American film scorer (US_02) who reported beginning with orchestration in her own compositional process said of her own approach to music as a listener, 'Usually it's melody and then its harmony, and then it's orchestration.' In contrast, an American composer of sacred music (US_04) gave a different hierarchy of factors conveying emotion in music: harmony, rhythm, phrasing/structure, and then melody. The different ordering of musical elements had the most to do with intellectual approaches to writing music. The same American film scorer (US_02), for instance, suggested the difference might have to do with the technical elements she struggles with as a composer being more salient as a listener just as the elements she prefers as a listener might be the hardest for her to craft when beginning a new composition.

It does not seem unreasonable that some composers approach listening to music differently than an average lay listener. Some interviewees were more self-reflective about this observation than others and could distinguish between when they were consciously evaluating a work and when they were listening for pleasure. This distinction seems to be related to whether emotion is experienced directly or via explicit intellectual inference. All but one of the interviewees could easily identify their own experiences of having a direct emotional reaction to hearing a piece of music, but given the automatic progression from perception to evaluation as proposed by appraisal theories of emotion (Moors et al., 2013; Oatley, 1992; Parkinson, 2011), it is somewhat dubious that composers would be entirely in touch with the associated psychological processes in themselves, let alone others.

Even though they were not consciously analysing what they heard at the time, many found it easy enough to think back and identify what about the music had moved them (e.g. US_03 could pinpoint harmony as the most moving aspect in retrospect). Others described detecting other composers' tradecraft more involuntarily: 'there are things that I, just as a listener, feel like – that I can pick up that people, the composer, seem to do' (US_08).

Those interviewees who teach or adjudicate were the most aware of their own evaluative processes. Emphasising consciously increased attention to structure and form, one such interviewee said, 'in terms of my conscious process, what I'd probably be more likely to be thinking of is: Does the musical structure hang together? Does it feel right in terms of its formal balance? Does it feel varied in the way that it – unfolds? And does it feel in some sense coherent' (US_01). A historical interview respondent spoke about different modes of listening for musicians, composers, musicologists, and amateurs but concluded, 'I always listen as a simple music lover first. … the main thing is that what I hear must make an impression on me. When it does there is every desire to understand it more fully with the aid of the intellect. Both composition and scholarship are confirmations that we have been profoundly moved by musical experience' (HI_02).

3.5. Cross-Cultural patterns

Some cross-cultural patterns also emerged from the interviews. One such difference was the prominence and hierarchy of representational elements in creating a musical (or affective) landscape: 'if you take [Western] classical music, you want harmony and melody complexity. But if you take like a traditional African or Asian music, you want rhythm complexity' (HT_01). Whereas in much Western music, 'from the classical perspective, harmonies usually drive the piece' (CA_01) and 'harmony is sort of the backdrop that the piece is created on' (US_05), composers from Asian, African, and Latin American traditions pointed out that 'Rhythm is what's driving the piece' (HT_01) and 'it was always like the rhythm behind it' (CA_01). Composers also reported on the enlightening effects of coming into contact with the affect-inducing qualities of other cultures' musical techniques. For example, a composer in Finland (FI_01) said,

> I took a course while I was studying in New York on Indian drumming rhythms and there was a lot of … They kind of opened my eyes to the emotional abilities that rhythm has [… .] And so that was very telling to me that emotional quality can be achieved through any number of parameters on even things that we don't even … that as a Western-classical-music-raised person I would never would have thought of rhythm as a parameter for emotional quality, but that was at a kind of perfect time in my development that opened me up to this seeing meter as a tool that can adjust very subtly the impact of a sonority or a gesture.

Whilst this interviewee's experience highlights cross-cultural differences in the affective scope of core musical elements and their representational potential, it also more subtly underscores a unity of affective response that supersedes background and training. The same interviewee recounted 'talking to a friend about [an emotional experience] after the class and he had said the exact same thing; like we both had felt that this rhythm somehow evoked Coldness. And we came to this same conclusion separately' (FI_01). These cross-cultural experiences underscore the importance composers from different traditions placed on specific musical elements.

Taken together, all of these results provide a strong qualitative basis for examining composers' engagement with emotion in their work, the various musical techniques, and the creative processes in which composers employ or manipulate those techniques to evoke emotions in their listeners. These findings also encourage future mixed methods research that can harness the benefits of both qualitative and quantitative approaches to bring more clarity to these processes in the social context of music composition, performance, and listening.

4. Discussion

This paper has attempted to qualitatively explore the role of composers in the process of emotion transmission in music by using a grounded theory approach to semi-structured interviews addressing key questions about emotional expressivity, intentions with respect to listeners, and core musical elements used in service of the above. The interviews primarily focused on what we have described as MET – the expressive mechanism by which composers evoke and attempt to induce in their listeners emotional experiences corresponding to their intended emotions – though a few composers alluded to other objectives (e.g. portraying a mood without the intention of inducing it in listeners). Whilst MET has been the focus of this empirical investigation, future studies should look at other forms of musical transmission of emotion, such as the portrayal of emotion without the intention of transferring it to the listener or the attempt to move listeners emotionally without the intention to express any one specific emotion in the music.

The interviews also helped empirically evaluate the 'lay of the land' when applying the various dimensional frameworks proposed in music theory, musicology,

and psychology to the modern practice of composers across different countries. Most but not all of the interviewed composers supported the notion that music can express emotional meaning. However, even the composers who had similar views about the affectivity of music responded diversely to interview questions about representational musical elements and techniques employed to convey or elicit emotion as well as about individual differences such as talent in deploying those methods. These findings emphasise that the composer's context is no less important than the listener's for understanding the communication of emotion, particularly with reference to creativity, inspiration, and imagination as motivational aspects of artistic work (Cui et al., 2020; Impett, 2016). Some of these considerations have been discussed in the literature (Cochrane, 2013; Dean, 2017; Impett, 2016), but future empirical research should particularly examine, for example, composer aptitude, authenticity, inspiration, and effort with respect to their engagement with emotion in their work.

Nonetheless, the overall findings confirm that the majority of composers engage with affective content in their own (or at least others') work and indicate that they can identify explicit mechanisms and techniques by which that content might be conveyed via music (even if not all strive for that result). Without specific prompting, composers suggested both musical elements and techniques for manipulating them corresponding to the music theoretical literature and some of our initial predictions about the aspects of composition used to convey an emotion or evoke it in listeners. In the interviews, we were able to compare the set of a priori index codes taken from music theory with the use of the elements they represent in actual composition practice. Based on interviewees' suggestions, future research can systematise those techniques into quantifiable measures that approach a comprehensive overview of those musical elements along core dimensions.

The techniques and processes emerging from the interview data thus helped clarify the ways composers both write and listen to music – and the affective content contained therein. Their responses both contribute to the large corpus of traditional literature on the topic of music creation and performance as well as help inform ongoing research into listeners' affective experiences thereof. The present interviews, as a primary source of practical knowledge, suggest a set of criteria for listeners to technically evaluate and psychologically appraise musical compositions by offering a cross-reference for the set of traditionally valued musical qualities rooted in active composers' actual practice.

Although listener experiences have been thoroughly examined, very little attention has been given to composer evaluations of their own work. Aesthetic theory suggests that both 'creator' and 'consumer' factors are important in understanding meaning and emotion in art (see Berlyne, 1960; Collingwood, 1938) and as such are likely critical mediators in any emotion transfer process. The present research thus helps address this disproportionate research focus at the levels of both basic musical elements and creative philosophies and links composers' approaches with musicological and psychological theoretical literature.

Whilst a review of previous psychological research into the affectivity of various musical factors suggests many potential pairings of specific emotions and specific representational elements (Gabrielsson & Lindström, 2001; Juslin, 2005), it is not negligible that all of the included studies are based on listener responses only. The present study is an important first step in understanding how composers engage with emotion in the musical materials they work with to produce their compositions. Much more research will be needed to bring the available amount of data from composers onto equal footing with that from listeners, but this start already sheds suggestive light on differences between composers' self-reported approaches to emotion in music and commonly accepted listener-based pairings of affective responses and musical factors.

When asked about specific associations of representational elements and affective responses, however, most composers were sceptical of reducing listener experiences entirely to culturally-informed or conditioned moods. Whilst some interviewees (particularly those involved in film scoring and composing incidental music) explained that these prototypical pairings of elements and emotions are sometimes a basis for their work, they find (both as composers and listeners) that the most evocative music does not linger in cliché territory long, especially when it is meant to be the primary object of orientation (i.e. not background music). Moreover, the sheer variety of ways composers described employing the musical elements and representational devices at their disposal seems to undercut the argument that affective responses to music are only the result of learned associations. When later asked explicitly about these issues, many interviewees pointed to complexity rather than stability as the critical difference in approach. In other words, though more complex emotions are less easily attributed to music (Sloboda, 1991; Sloboda & Juslin, 2001) and are often predicated on greater 'cognitive character' via appraisal (Gabrielsson, 2001), composers do not strive to create a single stable mood so much as to convey, over time, complex affective experiences for their listeners. These trends bring greater empirical clarity to the limited sample of previous composer interviews on

the topic of music and emotion (Cochrane, 2013; Douek, 2013), underscoring the calls therein for future research to move beyond confirming the presence of emotion in music to better understanding composers' intentions and engagement with emotion in their musical work.

4.1. Limitations

The findings of this study must be qualified by a number of limitations. First, not all composers found it immediately easy to adequately articulate and describe their composition process. Some were more explicit than others in naming an engrained reluctance to diminish the 'mystique' of the creative process by explicitly discussing their methodologies whereas others seemed to have never considered spelling out a habitual process prior to our conversation. The semi-structured approach to the interviews, however, allowed the flexibility needed to pursue these questions via the participants' own curiosity and interests with minimal use of leading questions or presumptive language. Second, whilst the definitions and understanding of the core musical elements are well-standardised in modern practice, other representational constructs were more nebulously defined – both in the literature and in the interviews. Moreover, though we analysed interviews with composers from diverse cultural backgrounds, sampling from conservatory – and university-educated composers who do not exclusively work with lyrics naturally skews towards a Western classical idiom (even for those composers who explicitly spoke about moving away from traditional musical elements and forms). This effect is compounded by the fact that those composers meeting our criteria who work primarily in jazz or electronic music genres did not respond or declined to be interviewed. Future research is needed to compare these findings across more diverse genres. Third, even interviewees who are, by nature, expert in the execution of their professional work are unlikely to be aware of all of the ways in which they convey emotion in their music, particularly within a psychological framework. Finally, our small pool of interviewees is not representative, so we are unable to draw meaningful comparisons such as for gender, country, style, or experience. Future studies should continue to examine composer traits and composition-specific processes and attempt to address these limitations with a larger sample size and more systematised recruitment.

4.2. Conclusion

Despite these limitations, the techniques and processes emerging from the interviews provide rich insights into the mechanisms by which composers may convey emotional meaning in their work. These include aspects of both technical elements (e.g. evaluations of compositional mechanics) and psychologically relevant processes (e.g. consideration of cognitive appraisals or culturally conditioned responses) from composers' actual practice that can be used to cross-reference traditionally valued musical qualities as well as theoretical assumptions and empirical research about their effects on listeners' emotions as found in the existing literature. Thus, the present examination of the composer's role in musical emotion transfer helps flesh out existing models of affectivity in music by extending empirical investigations of listeners' experiences to synthesise input directly from composers with the theory, philosophies, and psychology underpinning their work.

Author note

The research presented in this article was approved by the University of Oxford Medical Sciences Interdivisional Research Ethics Committee (MS IDREC) on 5 January 2022 (R79048/RE001).

Disclosure statement

No potential conflict of interest was reported by the author(s).

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