



Morbid curiosity for music containing violent themes

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ABSTRACT

Research suggests that engagement with music containing violent themes (e.g., extreme metal, rap) often results in positive psychosocial outcomes for fans. However, it is not clear why fans are attracted to ‘violent’ music in the first place. Experiment 1 ($N = 146$) examined whether trait morbid curiosity is associated with fans’ self-reported consumption of music containing violent themes. Experiment 2 ($N = 96$) presented short excerpts of extreme metal and rap music with or without violent themes to investigate whether individual differences in morbid curiosity predict listeners’ curiosity towards, enjoyment of, and desire to further engage with novel music with violent themes. Both experiments supported predictions: (1) fans of violently themed music exhibited greater morbid curiosity than fans of non-violently themed music; (2) morbid curiosity significantly predicted the consumption and enjoyment of music containing violent themes; (3) fans and non-fans’ intentions to further engage with novel music containing violent themes were significantly predicted by individual differences in the prevalence and magnitude of morbid curiosity. Findings suggest that trait morbid curiosity is an important factor in fans’ initial motivation to listen to and subsequently enjoy music containing violent themes. Implications for theories describing how fans derive positive psychosocial outcomes from media violence are discussed.

1. Introduction

Music containing lyrical themes of violence, murder, and torture often receives public attention when horrific acts of violence are committed. Community groups and policymakers want to understand whether exposure to such music increases aggressive tendencies among fans (Walsler, 2014; Warburton & Braunstein, 2012). Such concerns have increased with the growing popularity of violently themed music. Violently themed music, predominantly found in subgenres of extreme metal and violent rap, has achieved worldwide popularity with groups such as Cannibal Corpse selling millions of units worldwide. Multiple albums by Cannibal Corpse have reached the top 50 American Billboard charts (Lach, 2015), including their recent fifteenth album, *Violence Unimagined* (Lambgoat.com, 2021).

Contrary to concerns that exposure to violently themed music causes violence in the ‘real world’, there is little evidence that engagement with such music by fans predicts increased anger, aggressive cognitions, and aggressive or antisocial behaviour (Merz et al., 2021; for a review, see Olsen, Terry, et al., 2022). To the contrary, music containing violent themes can serve a range of positive psychosocial functions for fans

(Olsen, Powell, et al., 2022; Olsen & Thompson, 2021; Sharman & Dingle, 2015; Thompson et al., 2019). For example, fans report positive affective states (e.g., empowerment, joy, peacefulness), strengthening of social bonds, and experiences of self-reflection and self-regulation. Evidence of negative outcomes from exposure to this music has mainly been reported in experiments involving non-fans, or participants not screened for fandom, who are unlikely to listen to violently themed music outside of the laboratory (e.g., Anderson et al., 2003; Olsen, Terry, et al., 2022).

The enjoyment of violent media is not a new phenomenon. The so-called ‘paradoxical’ enjoyment of violence in art, film, and television has been well-documented throughout history (Andrade & Cohen, 2007; Menninghaus et al., 2017). Whilst a range of beneficial outcomes for fans of violently themed music has been documented in recent research (Olsen, Powell, et al., 2022; Thompson et al., 2019), the antecedents to becoming a fan are not well understood. Why are some people curious and ultimately attracted to music that on a surface level contains aversive and offensive content? The present study addressed this question by focusing on musical curiosity: the impulse to investigate, engage with, or gather information about a particular genre of music. Specifically, we

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examined the role that trait morbid curiosity may have in fans' attraction towards music with violent themes. Is morbid curiosity associated with the consumption and enjoyment of music with violent themes? Does morbid curiosity predict the inclination and desire to further engage with music containing violent themes that listeners have not heard before?

1.1. Morbid curiosity

Curiosity is ubiquitous and inherent to humans. Although somewhat difficult to define, curiosity is predominantly discussed as an intrinsic instinct to engage with a novel stimulus or situation (Kidd & Hayden, 2015). One early account of curiosity proposed that it functions to resolve gaps in one's knowledge (Loewenstein, 1994). Experimental findings support this account, with a range of studies revealing that individuals show greater curiosity for stimuli with an uncertain outcome, even when the outcomes are aversive, compared to neutral or aversive stimuli with certain outcomes (Hsee & Ruan, 2016).

Hsee and Ruan's (2016) findings allude to a very important and anecdotally well-established idea: people are often curious about aversive stimuli that would usually elicit avoidance and displeasure. Indeed, aversive content, such as content involving death, violence, and mutilation, is commonly consumed across a range of domains (Menninghaus et al., 2017; Scrivner, 2021). The act of 'rubbernecking' and slowing down to view the remnants of a car crash, the popularity of horror films and disturbing art, and documentaries about serial killers are all examples of the widespread nature of this phenomenon (Niehoff & Oosterwijk, 2020; Oosterwijk, 2017).

This concept is captured by the term *morbid curiosity* – an interest in dangerous or threatening phenomena. Morbid curiosity has been investigated in the context of violence portrayed through media and experienced in the real-world (Oosterwijk, 2017; Scrivner, 2021). Findings have shown that on average, people choose to view images of death, violence, or harm in a social context, such as a group of people standing around a dead body, more than neutral images (Oosterwijk, 2017). Furthermore, morbid curiosity can explain the rise in popularity of the pandemic-themed film *Contagion* during the initial wave of the COVID-19 pandemic (Scrivner et al., 2021). The level of morbid curiosity varies in the population and can be measured by the *Morbid Curiosity Scale* (Scrivner, 2021), a validated measure of a person's trait level of curiosity towards morbid phenomena.

1.2. The function of morbid curiosity

Why are people morbidly curious? What function does it provide? Morbid curiosity has been proposed as a means of helping individuals: 1) understand dangerous phenomena; 2) learn to avoid negative outcomes associated with dangerous phenomena; and 3) manage the emotions that morbid situations may evoke (Scrivner, 2021). A recent study using fMRI revealed that viewing intense negative stimuli, such as images of violence, engaged similar brain regions as those associated with curiosity for more general, non-negatively valenced stimuli (Oosterwijk et al., 2020). Therefore, rather than being maladaptive or indicative of psychopathology, morbid curiosity has positive functions that help people obtain information about all aspects of life, even content that is inherently threatening, unpleasant, or disturbing (Scrivner, 2021).

One common and popular way to explore morbid themes is through entertainment experiences, such as horror films and haunted houses. Such experiences allow people to understand death, fear, and pain in a context with minimal real-world implications (Andrade & Cohen, 2007; Rozin et al., 2013). Once an individual understands there is minimal real-world risk associated with engagement in the morbid material, they are more likely to keep negative emotions at a psychological distance while learning from violent contexts that would be highly dangerous in real-life (Menninghaus et al., 2017; Scrivner, 2021). This simulated opportunity to safely gain valuable information about threatening

situations and the associated emotions can then allow a morbidly curious individual to derive value, meaning, and enjoyment from the 'safe' exploration of morbid content (Andrade & Cohen, 2007; Bartsch et al., 2016). Hence, morbid curiosity facilitates the initial engagement with violent or threatening content, which can be reappraised into an informative, valuable, and even enjoyable experience (Rozin et al., 2013).

1.3. Experiencing value and enjoyment from violently themed music

There are several potential reasons why negative experiences are rare for fans of violently themed music. One possibility is that fans ignore lyrical content, attending to non-linguistic textures such as percussion and guitar (Arnett, 1991). A related possibility is that lyrical content is largely unintelligible and not processed (but see, Olsen et al., 2018). A third possibility is that fans interpret the violent themes as an artistic way of drawing attention to violence in society (Thompson & Olsen, 2018). Finally, some people may have a morbid curiosity that draws them towards violently themed music in the same way people are drawn towards horror films, haunted houses, and gothic fiction.

The current investigation evaluated the latter possibility. We hypothesised that morbid curiosity helps explain the *attraction* to music containing violent themes such as death, assault, and torture, as well as the *consumption* and *enjoyment* of music with violent themes. Whilst considered "perverted", "gruesome", and "scary" by non-fans (Thompson et al., 2019), fans of music with violent themes report positive experiences such as empowerment, joy, peacefulness and wonder at a significantly greater magnitude than negative experiences such as anger and fear (Olsen, Powell, et al., 2020). In one study, death metal fans commonly reported that the intensity of death metal music, as well as the technical proficiency displayed in the performances, were integral to their enjoyment and elicitation of positive emotions while listening (Thompson et al., 2019). However, the precursors to enjoyment and fandom for extreme music with violent themes have yet to be explored.

Research has established that fans of music with violent themes: 1) pre-consciously recognise and respond to threat signals in music to a similar extent to non-metal fans (Ollivier et al., 2019); 2) display no evidence of desensitisation to images of violence (Sun et al., 2019); 3) are more accurate than non-fans at processing the semantic content in 'growling' death metal lyrics (Olsen et al., 2018); 4) are similar to non-fans in their capacity for empathic concern (Slade et al., 2021); and 5) do not disproportionately exhibit psychopathological symptoms such as depression (Powell, Olsen, & Thompson, 2022). Hence, rather than ignoring or not processing violence or threat, fans appear to actively engage with the violent themes for a range of beneficial psychosocial functions. Fans of violently themed music likely utilise the low-cost environment of music to explore these threatening concepts and resulting emotions from a safe psychological distance (Menninghaus et al., 2017). This may allow them to re-appraise the threatening stimuli as a positive experience, leading to passionate fandom of this music and benefits such as the formation and validation of one's identity and emotions, and close social bonds with other fans or musicians (North et al., 2000; Olsen, Powell, et al., 2022). Thus, we hypothesised that trait morbid curiosity should predict the consumption, enjoyment, and inclination to engage with music containing violent themes, and these associations should be evident beyond the influence of other known predictors such as participants' appreciation of technical proficiency and musical intensity.

1.4. The present study

The goal of the present study was to investigate a link between morbid curiosity and the consumption and enjoyment of violent music, and to assess whether morbid curiosity predicts the desire to engage further with music containing violent themes. To this end, Experiment 1 involved surveying music fans to examine whether there is: 1) a greater

trait morbid curiosity in fans of violently themed music compared to fans of non-violently themed music, and 2) a relationship between morbid curiosity and the self-reported consumption and enjoyment of violently themed music. In Experiment 2, an online listening paradigm was employed to investigate whether morbid curiosity predicts curiosity towards, enjoyment of, and desire to further engage with previously unheard musical excerpts containing violent themes. We predicted that morbid curiosity would be associated with the consumption, enjoyment, and inclination to engage further with music containing violent themes.

2. Experiment 1

In Experiment 1, we investigated whether a relationship exists between morbid curiosity and the consumption and enjoyment of music with violent themes across a broad range of listeners. We recruited both fans of music containing violent themes and fans of other non-violently themed music genres. The design also allowed for the comparison of self-reported trait morbid curiosity among those who identify or do not identify as fans of music with violent themes. Finally, the study investigated whether morbid curiosity would predict enjoyment of violently themed genres over and above the contribution of two other factors reported by fans as integral to their enjoyment of music with violent themes: displays of technical proficiency and musical intensity (Thompson et al., 2019).

Four predictions were made. First, people who self-identify as fans of music containing violent themes should exhibit greater self-reported trait morbid curiosity than people who identify as fans of music without violent themes (H1). Second, trait morbid curiosity should also be associated with the number of hours of violently themed music consumed per week across fans and non-fans, but not associated with music consumption generally (H2). Third, across all participants, trait morbid curiosity should be associated with the enjoyment of genres containing music with violent themes including heavy metal, black metal, death metal, gangsta rap, and drill rap, but not genres that rarely contain violent themes, such as pop, blues, jazz, R'n'B/soul, and rock (H3). Finally, the relationships detailed in H2 and H3 should remain significant beyond the contributions of participants' appreciation of technical proficiency and musical intensity (H4).

2.1. Method

2.1.1. Participants

The final sample consisted of 146 first-year psychology students. The sample included 97 participants who identified as both fans of music and fans of music containing violent themes. Forty-nine participants identified as fans of music, but not as fans of music with violent themes. The two groups within the total sample did not significantly differ in age, years of musical training, or hours of total music listened to per week (t -values < 1.21, p -values > .05). The groups did significantly differ in the

hours of music with violent themes listened per week, $t(144) = 35.94, p < .001, 95\% \text{ CI } [5.86, 11.63]$, confirming that this sample of fans of violently themed music did indeed listen to such music significantly more than non-fans. Regarding personality measures, the groups significantly differed on agreeableness scores, $t(144) = 2.31, p = .022, 95\% \text{ CI } [0.34, 4.35]$ but no other personality measures (t -values < 1.53, p -values > .05). All demographic information and personality descriptives are reported in Table 1.

2.1.2. Measures

2.1.2.1. Morbid curiosity. The Morbid Curiosity Scale (Scrivner, 2021) measured participants' trait morbid curiosity through four subscales: body violation, interpersonal violence, motives of dangerous people and supernatural danger. Factor analysis has revealed the stability and reliability of the scale and each subscale (Scrivner, 2021). Participants were asked the extent to which they agreed with 24 items, six for each subscale. Responses were gathered on a 6-point Likert scale from 'strongly disagree' to 'strongly agree'. The internal consistency scores of all four subscales, and the internal consistency scores for the big five personality measure are presented in the supplementary material.

2.1.2.2. Personality. The 44-item Big Five Inventory (BFI; McCrae & Costa, 1999) was administered to assess the personality attributes of the sample across five personality dimensions: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O). Participants were asked to rate the extent to which various characteristics apply to them on a 5-point Likert scale ranging from 'disagree strongly' to 'agree strongly'.

2.1.2.3. Enjoyment of music genres. Participants were asked to what extent they agreed with statements about how much they enjoyed 10 different musical genres: five that typically contain violent themes and five that typically do not. The five genres that typically contain violent themes – heavy metal, death metal, black metal, gangsta rap, and drill rap – were selected because they were the most frequently reported genres by fans in a previous study investigating passion for music with violent themes (Powell et al., 2022). The five genres typically not containing violent themes - blues, jazz, rock, R'n'B/soul, and pop - were selected from the Short Test of Musical Preferences (Rentfrow & Gosling, 2003), to cover a broad range of musical preferences. At least one genre from each of Rentfrow and Gosling's (2003) four dimensions was included. Whilst the revised version of this model includes five dimensions (STOMP-R; Rentfrow et al., 2011), one dimension (mellow) contains genres often featuring instrumental music. As the five violently themed genres frequently include vocalisations and lyrics, the non-violently themed genres were selected to match this musical characteristic, while still encapsulating a broad range of preferences.

Participants were asked to answer one item for each genre, for

Table 1
Demographic information in Experiment 1.

	Group means (SD)		
	Fans of music with violent themes (n = 97)	Fans of music without violent themes (n = 49)	Total sample (N = 146)
Age	21.54 (6.31)	20.22 (5.98)	21.10 (6.21)
Gender (Male Female Non-Binary Preferred Not to Say)	32 62 2 1	11 38 0	43 100 2 1
Years of Musical Training	4.55 (4.19)	4.94 (4.57)	4.68 (4.29)
Hours of Total Music Listened Per Week	21.66 (17.67)	18.32 (15.99)	20.54 (17.14)
Hours of Music with Violent Themes Listened Per Week	10.63 (10.06)	1.83 (3.31)	7.64 (9.27)
Extraversion	24.39 (6.81)	26.16 (6.66)	24.99 (6.79)
Agreeableness	32.39 (5.69)	34.73 (5.96)	33.18 (5.87)
Conscientiousness	31.62 (5.04)	32.45 (5.30)	31.90 (5.12)
Neuroticism	27.39 (6.43)	26.33 (5.96)	27.03 (6.27)
Openness to Experience	37.15 (4.98)	35.88 (4.30)	36.73 (4.79)

Note. 'Years of Training' refers to years of both formal and informal musical instrument training.

example, “I enjoy heavy metal music”. The 10 items were created specifically for the present study. Agreement with each item was measured on 7-point Likert scales ranging from ‘strongly disagree’ to ‘strongly agree’. There was also an option for being unfamiliar with each genre of music. Such cases were removed from the analyses pairwise.

2.1.2.4. Questions about media usage. Items were included to measure the hours per week that each participant engaged with music, movies, and television, and how many of these hours contained violent themes. There were six items total. Two yes/no items also asked if participants identified as passionate fans of music, and if participants identified as passionate fans of music containing violent themes. Participants were also asked to select their favourite genre from a list of 25 genres, with an option to nominate a genre not on the list of 25.

2.1.2.5. Other questions about engagement with music. There were two items used to investigate different reasons that listeners may derive value from music. One item investigated the appreciation of displays of technical proficiency (“I value music in which performers exhibit elite skills when playing their instruments”) and the other investigated the appreciation of musical intensity (“I value music that is highly intense e. g., loud, forceful, energetic”). These factors were included as they have been reported qualitatively by fans of music with violent themes, specifically fans of death metal (Thompson et al., 2019).

2.1.3. Procedure

Participants were invited to take part in one of two studies: one advertised as a study about the enjoyment of music, and the other as a study about the enjoyment of music containing violent themes. Whilst the surveys were identical, recruitment material was tailored to the two different groups. The five genres containing violent themes were included in the advertisement as examples of violently themed music. Participants were not permitted to complete both surveys.

After giving informed consent, participants completed demographic questions and the personality measure (BFI). Participants were then asked about their years of musical training and whether they identified as a passionate fan of listening to music, and whether they considered themselves a passionate fan of listening to music with violent themes. Those who answered ‘no’ to the first dichotomous item were removed from the study to ensure all participants were passionate fans, and the other item was used to group participants based on their fandom of violently themed music.

Participants were then asked the appreciation of technical proficiency and musical intensity items, the media usage questions, and the favourite genre question. Participants completed the morbid curiosity scale at the end, to avoid potential bias when completing the other measures. Afterwards, participants were debriefed about the study’s true purpose, and consent was re-obtained.

2.1.4. Power analysis, recruitment strategy, and analysis plan

The sample size was selected to ensure that a medium effect size was detectable with ten predictor variables (morbid curiosity, age, gender, five personality factors, appreciation of technical proficiency and musical intensity). A group size calculation using G*Power (version 3.2) confirmed that 118 participants would be sufficient for regression analysis containing ten predictors at 80 % power. However, we expected missing data because some participants may not know all genres presented in the set of ‘enjoyment’ items, while others may choose not to respond to some items. Therefore, extra participants were recruited.

Trait morbid curiosity was included as the predictor variable, initially alongside gender, age, and the big five personality measures as predictors, as well as appreciation for technical proficiency and musical intensity for H4. However, as conscientiousness and neuroticism were not significantly associated with morbid curiosity in any analyses, these predictors were removed from further consideration for all dependent

variables. All participants were combined in these regression analyses to understand the relationship between morbid curiosity and enjoyment across a range of different music listeners. The data preparation and assumption testing are presented in the supplementary material.

2.2. Results

An independent samples *t*-test was conducted to investigate whether fans of violently themed music exhibited greater trait morbid curiosity than fans of non-violently themed music (H1). As predicted, fans of music with violent themes reported significantly greater mean trait morbid curiosity ($M = 4.11, SD = 0.97$) than non-fans ($M = 3.38, SD = 1.14$), $t(144) = 4.03, p < .001, 95\% CI [0.37, 1.08]$, with a medium-to-large effect size ($d = 0.69$).

Two multiple regressions were then conducted with trait morbid curiosity as the predictor, alongside the control variables, and hours per week of violent music and hours per week of total music consumed as separate outcome variables (H2). The first regression analyses revealed that morbid curiosity significantly predicted hours of violent music listened to weekly, $\beta = 0.24, t = 2.69, p = .008$, with the model explaining 10 % of the variance. The second confirmed that morbid curiosity did not significantly predict hours of all music listened to weekly, $\beta = 0.12, t = 1.32, p = .188$. Taken together, these results support the prediction that morbid curiosity predicts levels of engagement with violently themed music but not levels of engagement with all forms of music (H2).

Next, multiple regressions were conducted with trait morbid curiosity as the predictor, alongside the control variables, and the ‘genre enjoyment’ items as outcome variables (H3). Analyses revealed that morbid curiosity significantly predicted enjoyment of the five genres containing violent themes: heavy metal, death metal, black metal, gangsta rap, and drill rap. Morbid curiosity also predicted the enjoyment of rock music but none of the other non-violently themed genres. These results support the prediction that morbid curiosity predicts the enjoyment of violently themed music (H3) but not the enjoyment of non-violently themed music. Results from regression analyses are displayed in Table 2.

Finally, multiple regression analysis was conducted to investigate the relationship between morbid curiosity and the consumption of music with violent themes with the two added predictors of appreciation of technical proficiency and musical intensity (H4). Morbid curiosity remained a significant predictor of hours of violent music listened to weekly, and still did not predict the total hours of all music listened to weekly. Results for the enjoyment of the five violently themed genres revealed that morbid curiosity still significantly predicted enjoyment of all five genres with the two added predictors in the model. Morbid curiosity still predicted rock music enjoyment and, interestingly, positively

Table 2
Morbid curiosity as a predictor of the enjoyment of music genres.***

	<i>M</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Heavy metal	3.82	2.39	0.25	3.16	0.002**	0.28
Death metal	2.89	2.19	0.30	3.79	<0.001***	0.31
Black metal	2.84	2.11	0.26	3.04	0.003**	0.29
Gangsta rap	4.65	2.18	0.25	2.74	0.007**	0.10
Drill rap	3.69	2.18	0.20	2.06	0.041*	0.07
Rock	5.10	2.09	0.30	3.79	<0.001***	0.27
Pop	5.71	1.64	0.15	1.83	0.069	0.17
Jazz	4.47	2.05	<0.01	0.04	0.971	0.10
R’n’B/soul	5.68	1.75	0.08	0.95	0.345	0.15
Blues	4.15	2.09	0.13	1.46	0.147	0.10

All statistics are the only for the predictor of morbid curiosity in the multiple regression analyses, aside from the R squared values which include the variables controlled for in the analyses.

* $p \leq .05$.
** $p < .01$.
*** $p < .001$.

Table 3

Morbid Curiosity as a Predictor of the Consumption of Music and Enjoyment of Music Genres with Appreciation of Technical Proficiency and Musical Intensity in the Model.

Construct	Variable	<i>M</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Consumption	Hours of all music per week	20.54	17.14	0.16	1.65	0.102	0.06
	Hours of violently themed music per week	7.64	9.27	0.19	2.09	0.039*	0.12
Enjoyment	Heavy metal	3.82	2.39	0.17	2.13	0.035*	0.34
	Death metal	2.89	2.19	0.23	2.87	0.005**	0.34
	Black metal	2.84	2.11	0.18	2.06	0.042*	0.33
	Gangsta rap	4.65	2.18	0.23	2.39	0.018*	0.13
	Drill rap	3.69	2.18	0.20	2.01	0.046*	0.08
	Rock	5.10	2.09	0.27	3.35	0.001**	0.31
	Pop	5.71	1.64	0.21	2.43	0.017*	0.20
	Jazz	4.47	2.05	<0.01	0.04	0.972	0.18
	R'n'B/soul	5.68	1.75	0.10	1.14	0.256	0.16
	Blues	4.15	2.09	0.15	1.65	0.101	0.16

All statistics are the only for the predictor of morbid curiosity in the multiple regression analyses, aside from the *R* squared values which include the variables controlled for in the analyses.

* $p \leq .05$.

** $p < .01$.

predicted pop music enjoyment in this iteration of the model. These results confirm that morbid curiosity predicts the consumption and enjoyment of violently themed music beyond what can be explained by the appreciation of technical proficiency and musical intensity (H4). Results from these regression analyses are displayed in Table 3.

2.3. Discussion

Experiment 1 was the first investigation to establish the link between morbid curiosity and the enjoyment of music that contains violent themes. It revealed that morbid curiosity was significantly more evident in passionate fans of music with violent themes than passionate fans of non-violently themed music. Further, it revealed a reliable relationship between trait morbid curiosity and the consumption and enjoyment of music with violent themes. These findings suggest that music can provide a context that allows for the exploration of morbid themes with minimal real-world threat, where listeners can subsequently derive enjoyment from such engagement.

These relationships were found across the combined sample of fans of violent and non-violent music whilst controlling for demographic and personality variables. Morbid curiosity was not associated with hours of all music listened to in an average week, as well as being associated with only one of the five genres included in the study that commonly does not contain violent themes - rock music. Such relationships were still present and significant when other known factors that underpin the enjoyment of music containing violent themes were in the model, such as the appreciation of technical proficiency and musical intensity.

Notably, no musical stimuli were presented to participants in Experiment 1. Therefore, responses were based on participants' general understanding of each music genre rather than their experiences with specific music. It would be of value to corroborate the findings from the present study with one in which musical stimuli are presented. Further, curiosity is often defined as an approach motivation and a means of seeking information (Oosterwijk, 2017). Hence, it is important to understand whether morbid curiosity predicts the instinct to further engage with music containing violent themes, not just the consumption and enjoyment of it. Presenting different types of musical stimuli also provides the added benefit of understanding how different aspects of music evoke curiosity in the listener (e.g., sonic or lyrical content). Experiment 2 was designed to address these issues.

3. Experiment 2

Experiment 2 was designed to investigate whether morbid curiosity is associated with the desire to further engage with real excerpts of violently themed music. A $2 \times 2 \times 2$ within-subjects design was

implemented where excerpts from extreme metal and rap music (Genre conditions) were presented with violent or positive lyrical themes (Lyrical Valence conditions) in two different types of stimulus presentation (Media Content conditions): the first was an audio/visual presentation of the music and written lyrics concurrently, whereas the second was a visual-only presentation of written lyrics of music stimuli with no accompanying music (see Method for more detail on the composition of these conditions).

The two Media Content conditions and two Genre conditions all functioned to help tease apart the relative influence of violent lyrical content and the non-lyrical sonic features using two genres that often (but not always) contain violent themes: extreme metal and rap music. Although violent themes are commonly observed in these two genres, sonically they are very different. Extreme metal is often characterised by non-lyrical features such as fast tempos and 'blast beat' drumming, distorted guitar tones, and dissonant note choices (Olsen et al., 2018). Rap music commonly contains consistent and often digital percussion, slower tempos, and minimal instrumentation to provide space for the vocal (Fried, 2003; Travis, 2013). Finally, to further understand the importance of lyrical themes, excerpts of extreme metal and rap music containing positive themes were also presented in addition to excerpts with violent themes.

We predicted that trait morbid curiosity would positively predict curiosity for conditions containing violent themes (music/lyrics and lyric-only) but not conditions containing positive themes (H1). It was similarly hypothesised that trait morbid curiosity would positively predict enjoyment of conditions containing violent themes (music/lyrics and lyric-only), but not conditions containing positive themes (H2). Furthermore, we predicted that trait morbid curiosity would positively predict the proportion of excerpts containing violent themes that participants chose to further engage with, but not the proportion of positively themed excerpts (H3).

3.1. Method

3.1.1. Participants

Ninety-six first-year psychology students (31 male, 63 female, two identified as neither male nor female or preferred not to state their gender) participated in the study, and did not participate in Experiment 1. Of the total sample, 46 identified as musicians but no participants were professional or semi-professional musicians. All participants stated that they enjoy actively listening to music. Thirteen participants stated that they enjoyed listening to music with violent themes, whilst 83 stated they did not.

The sample size for the study was selected based on the design including seven control variables (age, sex, five personality factors) and

Table 4
Descriptive statistics for participants in Experiment 2.

	M	SD
Age	21.15	6.06
Years of musical training	7.30	0.65
Hours of total music listened per week	16.29	12.63
Hours violently themed music listened per week	2.03	3.00
Extraversion	26.15	6.26
Agreeableness	34.26	5.82
Conscientiousness	30.78	5.87
Neuroticism	25.91	5.94
Openness to experience	36.36	4.91
Morbid curiosity	3.24	1.01

thus ensuring medium effect size was detectable with eight predictor variables at 80 % power. A group size calculation using G*Power (version 3.2) confirmed that 84 participants would be sufficient. All participants took part in the study for course credit. Participants' demographic information and descriptive statistics of morbid curiosity and personality scores are reported in Table 4.

3.1.2. Stimuli

3.1.2.1. Music and lyrics stimuli. The musical stimuli presented to participants were 5-s excerpts from publicly released songs. The violently themed songs were selected from internet searches, leading music blogs and websites such as Reddit, where the search terms included *best violent* and *most popular violent* extreme metal and rap songs. Similarly, the non-violently themed songs were found from search terms such as *most popular positive*, *most popular uplifting*, and *most popular prosocial* extreme metal and rap songs. Some of the musical excerpts were also used in Olsen, Powell, et al. (2022) and Thompson et al. (2019).

Each participant was exposed to four excerpts from each of the following four different categories: extreme metal with violent lyrics, extreme metal with positive lyrics, rap music with violent lyrics, and rap music with positive lyrics. Short videos were made for each excerpt that presented the lyrics in white font on a black background while the audio played. Hence, there were 16 excerpts in total that included music and lyrics concurrently.

3.1.2.2. Lyric-only stimuli. Participants were also presented with 16 excerpts that only contained the written lyrics on the screen with no audio. These excerpts were taken from 5-second sections of the same 16 songs as the musical stimuli, but from different sections of each song. As such, all differed lyrically from the musical stimuli. The lyric-only excerpts were presented in the same format as the musical stimuli, just containing no audio. The presentation order of each excerpt was randomised within both the musical stimuli and lyric-only stimuli blocks and the presentation order of the two blocks was counterbalanced. There were no significant differences in the number of words presented between the violently themed and non-violently themed excerpts for extreme metal music, rap music, extreme metal lyrics, or rap lyrics. Statistics regarding the number of words in each different excerpt

Table 5
Number of words in each different excerpt condition.

Excerpt type	Mean number of words in non-violent conditions (SD)	Mean words number of words in violent conditions (SD)	Mean difference (p)
Extreme metal music	10.75 (2.50)	10.50 (3.11)	0.789
Rap music	18.75 (2.06)	20.75 (2.63)	0.343
Extreme metal lyrics	15.00 (3.56)	13.50 (1.73)	0.215
Rap lyrics	16.25 (3.59)	15.75 (2.36)	0.848

condition are presented in Table 5 and the lyrics from all excerpts are presented in the supplementary material. In total, all participants were presented a total of 32 trials: 16 x music/lyrics and 16 x lyrics only.

3.1.3. Measures

3.1.3.1. Responses to musical and lyric-only stimuli. Participants were asked six questions after the presentation of each musical and lyric-only excerpt. One question asked participants about their curiosity towards each excerpt, differing slightly between the musical and lyric-only excerpts ("Would you be curious to hear more of this musical excerpt?" and "Would you be curious to hear the song that this lyrical excerpt is from?"). Similarly, a second question asked about their enjoyment of the excerpt ("Did you find this musical excerpt enjoyable?" and "Did you find this lyrical excerpt enjoyable to read?"). These questions were scored on 5-point Likert scales from 1 (not at all) to 5 (extremely). Two yes/no questions were also asked, one about the desire to hear more of the song from the musical or lyric-only excerpt ("Would you like to hear more of this song?" and "Would you want to listen to a song with these lyrics?") and one question about whether the participant was already familiar with the song or not. If the participant indicated they were familiar with the song, they were asked to name the song and artist. Participants were also asked two open-ended questions regarding their curiosity about, and enjoyment of, each excerpt.

3.1.3.2. Other measures. The Morbid Curiosity Scale (Scrivner, 2021) and 44-item BFI (McCrae & Costa, 1999) were again used in Experiment 2. The internal consistencies for each subscale, along with the data preparation and assumptions testing, are presented in the supplementary material. The demographic questions, items regarding the enjoyment of music, and questions regarding hours per week that participants engaged with music, movies, and television (and how many of these hours contained engagement with violent themes), were the same as in Experiment 1. Participants were asked to record their favourite genre of music and whether they identified as a fan of music with violent themes.

3.1.4. Procedure

Participants completed the study online due to COVID-19 restrictions on face-to-face laboratory testing. After giving consent, participants completed the demographic and personality questions. A dichotomous yes/no question was asked regarding whether participants enjoy actively listening to music, with only those who responded 'yes' included in the final sample. Participants were then presented with an instruction screen for either the musical stimuli or lyrical stimuli block, depending on which was randomly presented first. Participants were then presented with the first block of 16 excerpts and questions after each excerpt. After a brief break, they were then presented with the other block, depending on the order of presentation. After the musical and lyrical stimuli sections were completed, participants were asked questions about media engagement habits. The morbid curiosity scale was again presented at the end and participants were again informed about the true purpose of the study and consent was re-requested.

3.2. Results

Participants' scores for curiosity, enjoyment, and desire to hear more of the excerpts were averaged across the four excerpts presented within each of the eight conditions, yielding a single score for each participant and each condition. Descriptive statistics of these scores are presented in Tables 6 to 8.

Regarding mean scores, 2 × 2 × 2 within-subjects ANOVAs were conducted with two levels of Genre (extreme metal, rap), two levels of Lyrical Valence (violent, positive) and two levels of Media Content (music/lyrics, lyrics-only) as independent variables (IVs) and the responses of curiosity, enjoyment, and desire to hear more as dependent

Table 6
Morbidity curiosity as a predictor of the curiosity towards each excerpt.

	<i>M</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Violently themed metal music	1.33	0.52	0.40	3.94	<0.001***	0.18
Violently themed rap music	2.14	0.99	0.17	1.66	0.100	0.19
Violently themed metal lyrics	1.87	0.84	0.34	3.56	0.001**	0.25
Violently themed rap lyrics	1.89	0.84	0.27	2.72	0.008**	0.20
Positively themed metal music	1.57	0.65	0.33	3.33	0.001**	0.22
Positively themed rap music	3.17	0.91	0.03	0.26	0.796	0.20
Positively themed metal lyrics	2.82	0.83	0.15	1.47	0.144	0.16
Positively themed rap lyrics	2.95	0.79	0.04	0.40	0.689	0.26

All statistics are the only for the predictor of morbidity curiosity in the multiple regression analyses, aside from the R squared values which include the variables controlled for in the analyses.

** *p* < .01.
*** *p* < .001.

Table 7
Morbidity curiosity as a predictor of the enjoyment of each excerpt.

	<i>M</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Violently themed metal music	1.26	0.40	0.28	2.76	0.007**	0.16
Violently themed rap music	2.05	0.86	0.09	0.92	0.360	0.26
Violently themed metal lyrics	1.61	0.60	0.27	2.64	0.010*	0.16
Violently themed rap lyrics	1.72	0.72	0.22	2.25	0.027*	0.20
Positively themed metal music	1.52	0.62	0.28	2.77	0.007**	0.16
Positively themed rap music	3.22	0.80	0.07	0.76	0.450	0.31
Positively themed metal lyrics	2.86	0.79	0.14	1.34	0.184	0.15
Positively themed rap lyrics	3.01	0.82	0.08	0.81	0.423	0.23

All statistics are the only for the predictor of morbidity curiosity in the multiple regression analyses, aside from the R squared values which include the variables controlled for in the analyses.

* *p* ≤ .05.
** *p* < .01.

Table 8
Morbidity curiosity as a predictor of the desire to hear more of each excerpt.

	<i>M</i>	<i>SD</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Violently themed metal music	0.06	0.13	0.30	2.84	0.006**	0.12
Violently themed rap music	0.33	0.32	0.07	0.61	0.540	0.12
Violently themed metal lyrics	0.25	0.31	0.34	3.35	0.001**	0.16
Violently themed rap lyrics	0.28	0.30	0.32	3.02	0.003**	0.12
Positively themed metal music	0.16	0.24	0.24	2.31	0.023*	0.14
Positively themed rap music	0.70	0.30	-0.04	-0.41	0.681	0.17
Positively themed metal lyrics	0.67	0.32	0.03	0.31	0.755	0.09
Positively themed rap lyrics	0.71	0.29	-0.02	-0.20	0.845	0.09

All statistics are the only for the predictor of morbidity curiosity in the multiple regression analyses, aside from the R squared values which include the variables controlled for in the analyses.

* *p* ≤ .05.
** *p* < .01.

variables (DVs). Each of these ANOVAs were significant, with significant main effects, two-way interactions, and a three-way interaction for each DV (all *F*-values > 26.6, all *p*-values < .001). Main effects revealed that rap excerpts evoked significantly greater curiosity, enjoyment, and desire to hear more than extreme metal excerpts. Positively-valenced

excerpts evoked greater curiosity, enjoyment, and desire to hear more than the violently themed excerpts. Lyric-only excerpts evoked greater curiosity, enjoyment, and desire to hear more than the musical excerpts. As a result, no conditions were combined in the analyses.

3.2.1. Hypothesis testing

Linear multiple regression analyses were conducted to test each hypothesis, with trait morbidity curiosity included as the predictor variable. Gender, age, big five personality, as well as familiarity with excerpts, when applicable, were initially included to control for their influence. However, as gender, neuroticism, and openness to experience were not significantly associated with morbidity curiosity in any of the conditions, these predictors were removed from the final analyses for all dependent variables.

As predicted in H1 and shown in Table 6, morbidity curiosity significantly positively predicted participants' curiosity to hear more of the violently themed extreme metal music/lyrics conditions, as well as both the violently themed extreme metal and rap lyric-only conditions. Contrary to predictions, morbidity curiosity did not significantly predict participants' curiosity to hear more of the violently themed rap music/lyrics condition. Morbidity curiosity also positively predicted curiosity towards the positively themed extreme metal music/lyrics condition, but there were no significant associations between morbidity curiosity and curiosity towards positively themed rap music/lyrics or either genre of positively themed lyric-only conditions. Hence, H1 was largely supported.

Results for ratings of enjoyment provided similar support for H2. As shown in Table 7, morbidity curiosity significantly positively predicted the enjoyment of the violently themed extreme metal music/lyrics condition, as well as both the violently themed extreme metal and rap lyric-only conditions. Morbidity curiosity positively predicted enjoyment of the positively themed extreme metal music/lyrics condition. There was again no significant association between morbidity curiosity and enjoyment of the violently themed rap music/lyrics condition, positively themed rap music/lyrics, or either genre of positively themed lyric-only conditions. Hence, H2 was also predominantly supported.

Finally, as can be seen in Table 8, morbidity curiosity also significantly positively predicted the desire to further engage with the violently themed extreme metal music/lyrics condition, both the violently themed extreme metal and rap lyric-only conditions, and the positively themed extreme metal music/lyrics condition. Again, there was no significant association between morbidity curiosity and enjoyment of the violently themed rap music/lyrics conditions, positively themed rap music/lyrics conditions, or either genre of positively themed lyric-only conditions. Hence, H3 was also largely supported.

3.3. Discussion

The results of Experiment 2 predominately supported hypotheses and extended the findings of Experiment 1. Morbidity curiosity was a significant predictor of the curiosity towards, enjoyment of, and desire to hear more of the excerpts of extreme metal music containing violent lyrics, and to read more of the lyric-only presentations of violently themed rap and extreme metal songs. Contrary to predictions, morbidity curiosity also positively predicted curiosity towards, enjoyment of, and desire to hear more of extreme metal music excerpts containing positive lyrics, but did not predict these responses to violently themed excerpts of rap music. There were no relationships between morbidity curiosity and rap excerpts containing positive lyrics, or lyric-only presentations of positively themed rap or extreme metal lyrical excerpts, as hypothesised. Therefore, the findings of Experiment 2 support the initial relationships observed in Experiment 1 and extend those findings by presenting specific real-world excerpts of violently themed music, while establishing a connection between morbidity curiosity and the desire to further engage with violently themed music and lyrics.

4. General discussion

Two experiments were conducted to investigate the relationship between morbid curiosity and the enjoyment of music containing violent themes. Results across both experiments supported the overarching hypothesis that morbid curiosity is a key factor in predicting the attraction to music containing violent themes. Significant relationships were observed in Experiment 1 between morbid curiosity and the consumption and enjoyment of genres that commonly contain violence across the entire sample of fans and non-fans. Fans of music containing violent themes in Experiment 1 also reported greater trait morbid curiosity than non-fans. In Experiment 2, trait morbid curiosity was predictive of the curiosity towards, enjoyment of, and desire to further engage with musical and lyrical excerpts containing violence across a sample of predominantly non-fans.

The present study is the first investigation to establish a link between morbid curiosity and music that contains violent themes. In doing so, the findings reveal a novel contributing factor for understanding the attraction to music that many people find aversive and offensive (Thompson et al., 2019). Some fans claim they attend to the music and not the lyrics (Arnett, 1991), suggesting that violent lyrical themes may contribute little to the aesthetic enjoyment and appeal of the music. However, we observed that aesthetic responses are indeed impacted by the violent themes, and that fans gravitate to this type of music, in part, because of their high trait morbid curiosity.

It is important to note here that trait morbid curiosity does not imply a morbid, deviant or strange personality. Instead, morbid curiosity is proposed as an adaptive trait that allows people to explore and learn about threatening or difficult aspects of life. Through the consumption of violent visual media such as horror and thriller films or serial-killer documentaries, morbidly curious individuals gain an understanding about death and threat-related experiences in a safe context, while learning to regulate and manage the emotions that would be evoked by such experiences in 'real life' (Niehoff & Oosterwijk, 2020; Scrivner, 2021). The present findings enrich our understanding of the construct of morbid curiosity by providing evidence that violently themed music is used by morbidly curious individuals as a low-cost means of exploring death and threat-related experiences. Our results show that music permits the exploration of morbid phenomena, even though music does not contain visual scenes of death and threat often observed in violent film and television. Music with violent themes provides listeners with an opportunity to experience and confront themes of violence, fear, and aggression in a way that does not directly expose listeners to real-world threat. Qualitative reports from extreme metal fans support this interpretation, showing that fans use extreme metal music to work through difficult emotions and concepts such as fear and anger (Thompson et al., 2019).

We suggest that fans derive enjoyment and appreciation from the low-cost nature of the threatening material by being able to address, validate, and even overcome difficult thoughts, fears and anxieties (Andersen et al., 2020). This attraction and enjoyment may further develop into a passion for music with violent themes. Research has shown that harmonious passion for music with violent themes can facilitate a range of psychosocial benefits for fans of such music, including positive emotions and increased experiences of social bonding and cohesion (Olsen, Powell, et al., 2022). In other words, morbidly curious listeners can achieve positive experiences in response to violence in music through the exploration of morbid themes at a safe psychological distance; experiences that may develop into passionate fandom for this music and the derivation of psychosocial benefits that come with such fandom.

Another aim of this study was to understand the specific genres of violently themed music that morbidly curious individuals enjoy. In Experiment 1, whilst morbid curiosity predicted the enjoyment of all violently themed genres, the regression coefficients for associations between morbid curiosity and extreme metal subgenres were stronger

than those for rap subgenres. In Experiment 2, the curiosity, enjoyment, and desire to engage further with lyric-only presentations of violently themed extreme metal and rap music were associated with morbid curiosity. However, when music was presented alongside the lyrics, these significant relationships were observed for extreme metal music but not for rap. Further, morbid curiosity predicted the curiosity towards, enjoyment of, and desire to hear more of extreme metal music excerpts containing positive lyrics.

These findings suggest that lyrics with violent themes are an integral part of the musical experience when exploring morbid themes. Moreover, these findings provide further evidence that the non-lyrical elements in extreme metal music provide an additional sonic layer that adds to the morbid context of the music experience. Extreme metal music subgenres, such as death metal and black metal, have a combination of violence in the lyrical content, as well as sonic elements including screaming vocalisations and dissonant, distorted guitars that listeners commonly experience as fearful, aggressive, and highly arousing (Olsen et al., 2018; Tsai et al., 2010). The combination of these features likely evokes a stronger sense of a 'dark' and 'morbid' experience than the sonic features of rap music, which is commonly slower in tempo, less driven by distorted instrumentation and spoken rather than screamed or growled vocals.

The role of sonic features in music may also help explain an unexpected finding observed in Experiment 1. Morbid curiosity predicted the enjoyment of rock music, even though rock music was categorised in this study as a genre not frequently containing overt violence. However, the enjoyment of rock music was moderately correlated with all extreme metal subgenres in the present study and has previously been categorised with heavy metal as 'Intense and Rebellious' music (Rentfrow & Gosling, 2003). Therefore, whilst rock music may not commonly contain overt themes of violence, its sonic elements appear related to those in some metal genres and may function in a similar way to sonically convey anger and/or aggression.

Future research should address these unexpected findings. Firstly, as morbid curiosity did not significantly predict the attraction to violently themed rap music in Experiment 2, research is needed to identify the factors that contribute to the attraction and enjoyment of rap music with violent themes. Administering an open-ended questionnaire that asks about motivations for engaging with violently themed rap music may elucidate the predictors of attraction and enjoyment. Conversely, as morbid curiosity predicted the enjoyment of rock music in Experiment 1, research is needed to understand which specific styles of rock music create morbid environments. Conducting a study that presents short excerpts of various styles of rock music that contain different tempos, uses of distortion, and different vocal techniques may help understand the specific musical features associated with the attraction to such music in the absence of violent lyrical themes.

Future research could also test the conjecture that morbid curiosity predicts individuals' *initial* approach motivation towards violently themed music. To address this conjecture, a paradigm could be used where a series of different song titles are presented, some containing violent themes and some containing positive or neutral themes. Morbid curiosity could then be used to predict the proportion of novel song titles with violent or non-violent themes that participants select to listen to. One hypothesis is that higher trait morbid curiosity predicts an increased likelihood that listeners will select violently themed music.

Similarly, a preference paradigm that is like the visual media study reported in Scrivner (2021) could be employed, where brief simultaneous presentations of two musical excerpts or descriptions of musical excerpts are used in each trial, one containing violent themes and another containing positive or neutral themes. Participants indicate which stimulus in each pair they would prefer to hear in full. Again, morbid curiosity should predict a higher proportion of violently themed music selections.

Future research should also investigate the influence of state morbid curiosity on the consumption and attraction to violently themed music.

As state morbid curiosity may be described as a specific instance where morbid curiosity is evoked, it would be of value to understand whether violently themed music is enjoyed more when accompanied by other morbid material that may act to induce state morbid curiosity. For example, violently themed music could be used as the main musical accompaniment to a graphic television documentary about serial killers. Listeners' enjoyment of the violently themed music could be measured and compared to the enjoyment of the same music without the morbid documentary accompaniment that may act to induce a state of morbid curiosity.

The current investigation did not explicitly ask participants to provide reasons for their curiosity and inclination to engage further with music. Morbid curiosity significantly predicted these behaviours for most conditions containing violent themes, but participants may have also had non-morbid reasons for wanting to hear each excerpt further. For example, the novelty of the musical style for non-fans could have evoked curiosity (Dubey & Griffiths, 2020). To address this limitation, future studies could include open-ended questions to determine why listeners might want to engage further with music. Such explicit questions could reveal additional factors responsible for evoking curiosity. Finally, our investigation considered morbid curiosity, but no other forms of curiosity were investigated, such as the Five Dimension Curiosity Scale Revised (Kashdan et al., 2020). Including additional measures of curiosity in future research would allow an assessment of the relative importance of morbid curiosity versus other forms of curiosity in the enjoyment of violently themed media.

To conclude, the current findings implicate a novel functional explanation as to why people are attracted to music containing violent themes. Further, rather than suggesting that the enjoyment of violently themed music is problematic, as commonly implied (Walser, 2014), the attraction to violently themed music may reflect an adaptive and healthy desire to learn more about threatening and difficult situations. Morbid curiosity helps to explain the initial attraction that allows fandom for such music to develop, eventually permitting fans to derive value, enjoyment, and adaptive psychosocial outcomes.

CRedit authorship contribution statement

Merrick Powell: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing. **Kirk N. Olsen:** Writing – review & editing, Supervision, Conceptualization, Methodology. **William Forde Thompson:** Writing – review & editing, Supervision, Funding acquisition, Conceptualization, Methodology.

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Appendix A. Supplementary data

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