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Attraction to Sad Music: The Role of Imagery, Absorption, and Rumination

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Attraction to Sad Music: The Role of Imagery, Absorption, and Rumination

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Previous studies have identified links between attraction to negative emotion in music with the traits of absorption and rumination. However, no studies have examined the possible interdependencies and influences of these traits. We sought to determine whether a cognitive processing path that leads to attraction to sad music could be identified. We argued that auditory imagery might be an interesting competency to add to the investigation because of the links between imagery and absorption. Participants completed validated surveys measuring the three target cognitive measures, as well as a Like Sad Music Scale. Mediation analysis revealed that absorption mediated imagery in response to sad music, as predicted, and rumination predicted attraction to sad music independently of the other traits. Suggestions for expanding the cognitive process path are proposed, including further investigation of the possible central role of absorption.

Keywords: absorption, auditory imagery, rumination, dissociation, negative emotion in music

The attraction to some pieces of music, but not others, is dependent on the factors that may be referred to as exposure (Bornstein, 1989; Schubert, Hargreaves, & North, 2014), social bonding (Freeman, 2000; Kreutz, Quiroga Murcia, & Bongard, 2012; Quiroga Murcia, Kreutz, Clift, & Bongard, 2010), and musical qualities such as rhythm and timbre (e.g., Keller & Schubert, 2011; Martindale & Moore, 1989; Wapnick, Keech, & Ryan, 2012). However, particularly since the work of Kemp (1996), researchers have also become increasingly interested in identifying the contribution of personality traits to music selection and enjoyment. For example, research has revealed that extraverts are attracted to music that expresses high-arousal emotions (Dollinger, 1993; Rentfrow & Gosling, 2003). The converse also seems to be true, with a study by Ladinig and Schellenberg (2012) showing that the liking of sad, low-arousal music was reported more fre-

quently by people who scored low in extraversion. But these results are not without controversy. Chamorro-Premuzic and colleagues argued that individual variables such as age and preferred[1] use of music (e.g., to regulate emotions, or to have music in the background) can better explain responses to music than do personality traits (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic, Swami, & Cermakova, 2012), and a study by Hunter and Schellenberg (2011) demonstrated interactions between personality factors and self-selected exposure to music.

A particularly intriguing question is why some people are attracted to music that evokes negative emotions (Garrido, 2016; Garrido & Schubert, 2011b; Hunter, Schellenberg, & Schimmack, 2010; Huron, 2011; Kawakami, Furukawa, Katahira, & Okanoya, 2013; Mori & Iwanaga, 2014; Schellenberg, Peretz, & Vieillard, 2008; Smuts, 2011; Vuoskoski & Eerola, 2012; Vuoskoski, Thompson, McIlwain, & Eerola, 2012). Over three studies Schubert (2007, 2010, 2013) found that approximately one third of participants preferred music that evoked negative emotions. Ladinig and Schellenberg (2012) proposed that individuals with a high propensity to become absorbed in an activity are more likely to enjoy sad music (see also Hall, Schubert, & Wilson, 2016;

[1] We use the terms *attraction, preference, liking,* and *pleasantness* more or less interchangeably in this article, treating them as members of the general concept *hedonic tone* (see, e.g., Labukt, 2012; Schubert, North, & Hargreaves, 2016), although *attraction* is a broad term because it is associated with two kinds that are critical to the present study: "adaptive" attraction and "maladaptive" attraction. The maladaptive kind is discussed later.

Kreutz, Ott, Teichmann, Osawa, & Vaitl, 2008). Absorption is the propensity of the individual to lose oneself when engaging in an activity. It is related to *normative dissociation,* which Butler defined as "the temporary alteration or separation of what are normally experienced as integrated mental processes" (Butler, 2006, p. 45). According to Schubert (2009–2010), in this type of mental dissociation, individuals are able to "switch off" pain circuits when listening to music (or when engaging in other artistic pursuits), leaving the nonpain circuits free to become activated. Any activation under such circumstances generates positive affect (Schubert, 1996, 2010, 2013; Schubert, North, & Hargreaves, 2016), and so more activation, even if a negative emotion, is enjoyed. Absorption appears to be a de facto measure of this propensity to dissociate (Garrido & Schubert, 2010; Schubert, 2010). In this respect, the trait of absorption is ontologically more closely related to musical experience and engagement than are other personality factors. Evidence has suggested that people who experience such immersion will have the intensity and pleasure of the experience enhanced (Agarwal & Karahanna, 2000; Hall et al., 2016; Kreutz, Schonk, & Upano, 2007; Rodríguez-Sánchez, Schaufeli, Salanova, Cifre, & Sonnenschein, 2011).

On the other hand, Garrido drew attention to maladaptive attraction to negative emotion in music: Participants with a high propensity to ruminate, that is, to have involuntary, repetitive negative thoughts, appear to listen to music evoking negative emotion to maintain negative mood (Garrido, 2009, 2016; Garrido & Schubert, 2011b, 2013, 2015; Garrido, Schubert, & Bangert, 2016). Whether this is a kind of pleasure or not is a moot point, but the evidence has suggested that people who exhibit high levels of rumination do not enjoy the experience (see, e.g., Garrido & Schubert, 2011a, 2013, 2015; Mayes, Humphrey, Handford, & Mitchell, 1988; Wilhelm, Gillis, Schubert, & Whittle, 2013). Garrido and Schubert (2013) found that both absorption and rumination contribute, more or less independently, to attraction to negative emotion induction from music. Thus, trait absorption was associated with enjoyment of the negative emotions through cognitive dissociation, whereas trait rumination was associated with seeking stimuli that would maintain negative mood, without dissociation. What that study did not do, however, was to see whether these traits may have been mediated by, or themselves have mediated, other characteristics in response to negative emotion-inducing music. The implication is that these two traits (absorption and rumination) may exclusively account for attraction to music. A subsequent study did find that rumination was mediated by absorption (Garrido & Schubert, 2015), and according to Garrido (2016, p. 139), rumination is understood to be a form of "self-absorption" in which people become absorbed in self-negative thoughts. But the findings have yet to be replicated. Could factors contributing to enjoyment of music be impacted by absorption and rumination, with these last two factors being the final arbiters of the musical experience? And if so, do they influence the experience independently, or interactively? Or might some other factors be more powerful predictors, in which case, absorption and/or rumination might impinge on those to generate musical listening habits.

To investigate this, we chose a single characteristic to test the processing path: vividness of auditory imagery. In other words, we wanted to see whether imagery is the critical contributor to musical response and mediates other variables, or whether absorption and/or rumination in fact mediate other variables—in this case, auditory imagery.

The term *imagery* has found several homes in psychological research (see, e.g., volumes and works such as Godoy & Jorgensen, 2001; Hargreaves, Hargreaves, & North, 2012; Roth, 2007; Weber & Brown, 1986; Wohldmann, Healy, & Bourne, 2007). It can refer to the activation of vivid memories that are triggered by an activity such as listening to music, or it can refer to an individual skill set, regarding one's *ability* to conjure up an image (typically visual; Baumgartner, 1992; Janata, 2001). In this respect, imagery is also related to absorption (Roche & McConkey, 1990; Tellegen & Atkinson, 1974). That is, absorption is associated with a suspension of disbelief that can occur while engaging in fantasy-like activities that elicit mental images, such as playing a computer game, reading a fiction novel, watching a drama, or listening to music (Barrett, 1990; Merckelbach, Horselenberg, & Muris, 2001; Webster & Saucier, 2011). For example, a person who is highly prone to being absorbed will more easily be able to generate imagery that will allow immersion into the plot of a movie or novel, voluntarily suspending the awareness that the story is fictional. In other words, there appears to be an element of fantasy and imagination in the experience of absorption (see also Herbert, 2013).

In the broadest sense, under the label *imagination,* imagery can refer to a raft of processes that are at the heart of cognition, as Hargreaves explains: "Musical imagination, which consists of internal cognitive representations, is at the core of both musical perception and musical production" (Hargreaves, 2012, p. 540). He presented different perspectives on imagination, ranging from the broadest yet most fundamental level of processing found in cognitive networks of association through to narrow, specific ideas about divergent thinking (now frequently subsumed by creativity research) and "fancy," which is related to fantasy, spontaneity and even attraction itself.

It is important to be specific as to which aspect researchers refer. Balteş and Miu (2014) investigated the role of visual imagery among other variables in emotional response to music. In that case, visual imagery was one of the possible outcomes of emotion that can be generated by listening to music. They reported the correlation of a number of cognitive variables with emotional responses generated by listening to a Puccini opera. They hypothesized that "visual imagery would be associated with increased emotional experience by allowing the spectators to imagine places or events evoked by the lyrics . . . and associate visual images with the music" (p. 59). Limited evidence supporting these hypotheses were reported, with visual imagery scores' being correlated with the emotion of unease.

The Balteş and Miu (2014) study focused on emotional response per se, to a specific piece of music, and did not investigate the sequence of processing, should a cognitive processing sequence exist. As Balteş and Miu suggest in their findings, it may be a process that leads to emotion rather than being an emotion itself (see also Baumgartner, 1992). In other words, the question of causation versus association arises. If any kind of imagery were a "cause" of an emotional–liking response, one would expect the imagery to mediate the response via the music. That is, the music is heard, the imagery evoked, and the pleasure triggered by the image, and so indirectly by the music. Juslin and Västfjäll explained the causality of visual imagery in the case of emotion in

music: "Emotion is induced in a listener because he or she conjures up visual images (e.g., of a beautiful landscape) while listening to the music" (Juslin & Västfjäll, 2008, p. 566). If one generalizes this explanation, the causal path of enjoyment begins with the music, which then ignites the imagery that then leads to the enjoyment.

The question then arises, where do absorption and rumination fit into this chain? We have argued that absorption and imagery can be related and that rumination is a kind of maladaptive absorption, but the order of the pathway is unknown: Whether, in response to music, trait absorption mediates imagery (Hypothesis 1 [H1]) or the other way around, imagery mediates trait absorption (H2), as shown in Figure 1. Furthermore, we wanted to know the relative contribution of rumination and absorption (H3 and H4) to the enjoyment of music. Understanding these pathways will help to answer the question of what variables are likely to play the most critical role in musical behavior.

To this end, it is interesting that the bulk of research on imagery in preference or emotion in music is limited to visual imagery. We argue here that auditory imagery is a logical candidate for nonreferential kinds of mental "fancy" in music. Gordon (1984) conceptualized auditory imagery as a strategy for effective music playing, when internally hearing musical sound corresponds to the music notation being read (see also Sacks, 2006, p. 2530). The Bucknell Auditory Imagery Scale (BAIS; Halpern, 2015) provides a parsimonious way of self-assessing imagery. It assesses reported vividness of auditory imagery as well as the ability to change one sound into another ("control"). The scale has been shown to predict how well singers can match the tones of a target pitch (Pfordresher & Halpern, 2013), suggesting that auditory imagery plays an im-

portant role in the singer's ability to plan the production of a sung note and therefore suggesting that BAIS is a measure of some kinds of competency. Functional magnetic resonance imaging scans have demonstrated greater activity when imagining a familiar tune in a circuit comprising right-lateralized auditory and memory areas (including the secondary auditory areas) among those who scored high in auditory imagery vividness (as measured by the BAIS vividness subscale [BAISV]; see Herholz, Halpern, & Zatorre, 2012). Therefore, because vividness of auditory imagery appears to have a well-defined neuroanatomical location and reliably indicates an imagery-related competency, it is a meaningful and reliable measure that can be used to help assess the location of imagery along the cognitive processing pathway. If auditory imagery is indicative of an individual's ability to plan musical production, as in the case of singing, and to imagine familiar tunes, but at the same time imagery has links with absorption, how might it be implicated in the attraction to music?

The aim of our study, then, was to investigate the cognitive measures of absorption, auditory imagery, and rumination to examine how they each explain attraction to negative emotion in music and, above all, to see whether their contributions are independent or mediated by one of the other cognitive measures as presented in Figure 1.

Method

Participants

Of the 168 participants recruited, 143 (81 female) completed the surveys. Ages ranged from 17 to 42 years ($M = 20.83$, $SD = 2.93$). The time spent playing a musical instrument ranged from 0 to 27 years ($M = 7.21$, $SD = 5.180$). Music-listening time per week ranged from 2 to 100 hr ($M = 20.27$, $SD = 17.272$). Finally, we asked how much time participants spent listening to sad music. The range as a proportion of total music listening time was from 0% to 100% ($M = 26.3$, $SD = 24.77$). In other words, on average, participants in the sample reported listening to sad music for one quarter of their listening time, and we had a wide range, meaning that variance in the Like Sad Music Scale (LSMS) should be usefully large. Participants were undergraduates who completed the study in return for course credit.

Materials

The psychometric scales that were selected to estimate the various cognitive characteristics of interest are listed in Table 1. The table indicates the intended cognitive measure that this study attempted to interpret, as well as the scale−subscale used.

Procedures

The study was conducted online and completed in one sitting. Participants entered background information and completed the various psychometric subscales. The order in which each subscale was presented was randomized between participants.
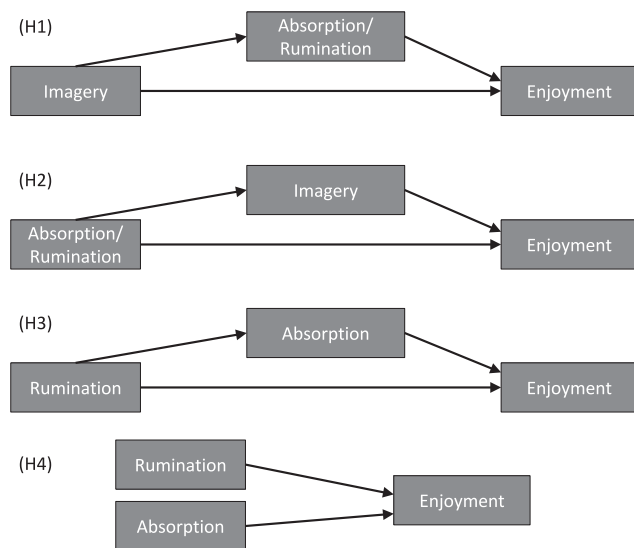
Figure 1. Conceptual diagram showing two competing hypotheses (H1 and H2): H1 (top), Absorption and/or rumination mediating the enjoyment of music (H1; top) versus imagery mediating enjoyment of music (H2). The diagram presents a further two competing hypotheses (H3 and H4): Rumination mediated by absorption (H3) versus rumination and absorption independently contributing to enjoyment of music (H4; bottom). (Notation is based on Hayes, 2013).

Table 1
Psychometric Scales Used to Measure Target Traits

Target trait measured	Scale	No. items	Sample item
Auditory imagery	BAISV: Vividness subscale of the Bucknell Auditory Imagery Scale (Halpern, 2015)	14	"the vividness of hearing a trumpet play 'Happy Birthday'"
Rumination	RUM from RRQ: Rumination subscale of the Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999)	24	"Long after an argument or disagreement is over with, my thoughts keep going back to what happened."
Absorption	ABS from AIT: Absorption subscale from Absorption, Intellectance and Liberalism Questionnaire (Glisky & Kihlstrom, 1993)	12	"It is sometimes possible for me to be completely immersed in nature or in art and to feel as if my whole state of consciousness has somehow been temporarily altered."
Attraction to negative emotion in music	LSMS: Like Sad Music Scale (Garrido & Schubert, 2013)	11	"I enjoy feeling strong emotions in response to sad music."

Results

Reliability of Scale Scores

All psychometric subscale scores had a Cronbach's alpha greater than .82 (descriptive statistics and Cronbach's alpha information are reported in Table 2).

Mediation Analysis

We examined the correlations among the key variables of the BAISV, the Absorption, Intellectance and Liberalism Questionnaire (AIT; Glisky & Kihlstrom, 1993), the Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999), and the LSMS as the first step of our investigation, to see whether any variables should be eliminated from subsequent analyses (Baron & Kenny, 1986). Table 3 shows the descriptive statistics and the Pearson product moment correlation coefficient matrix. The matrix shows that rumination correlates with only the target dependent variable, LSMS. As a result, rumination can be considered a potential predictor of LSMS but plays no role as a mediator of the other two variables. Therefore, rumination must contribute to LSMS independently of absorption, supporting H4 but not H3.

We conducted mediation analysis as proposed by Hayes (2013). In its simplest form, mediation analysis allows the identification of the role of one or more variables (e.g., M_1, M_2) acting to mediate another variable (X) in explaining variance of a dependent variable (in this case, liking sad music, Y).

Two mediation analyses were conducted. One examined the role of absorption and rumination in mediating the influence of imagery, and the other examined the role of imagery in mediating the influence of absorption. Rumination was included in the former model for completeness, even though the correlation analysis revealed it unlikely to have an indirect or mediatory influence upon the variables of interest, apart from LSMS. Mediation analysis was conducted using the PROCESS macro (http://processmacro .org/index.html, release 2.16.2) developed by Hayes (2013). All analyses were conducted using SPSS, Version 23. The macro provides both bootstrapping and the Sobel test for evaluating the effectiveness of mediators (Hayes, 2009).

One mediation analysis investigated the role of imagery as a mediator of absorption in predicting liking sad music. This analysis produced a nonsignificant mediation effect, with the contribution of absorption being statistically identical whether BAISV was included as a mediator or not, according to both a Sobel test ($z = .3455$, $p = .7397$, $\kappa^2 = .0252$) and bootstrap 95% confidence interval [$-.0050$, $.0805$].[2] As a result, H2 could not be supported.

The other mediation analysis included absorption and rumination as proposed mediators of imagery in predicting liking sad music. The Sobel test for this model was significant for the role of absorption ($z = 2.91$, $p = .0036$, $\kappa^2 = 6.33$), indicating that the amount of variance explained by the direct effect of BAISV was considerably reduced when its indirect effect was captured by the mediation of absorption, in support of H1. This was not the case for rumination ($z = .80$, $p = .4259$, $\kappa^2 = .86$), as the correlation matrix of Table 3 indicates. The coefficients for this mediation model are shown in Figure 2.

As a result of the mediation analysis, absorption may be conceptualized as a mediator of vividness of imagination in determining liking for negative emotion in music. Rumination, on the other hand, is not triggered by auditory imagery in its contribution to the experience of negative emotion in music.

The contribution made by auditory imagery is indirect and mediated by absorption (H1 rather than H2). This mediation analysis also replicates the important but independent contribution that rumination makes to LSMS. That is, people who ruminate might listen to sad music because it allows them to continually focus on something negative. But auditory imagery does not play a role in rumination. Absorption and rumination each made an important, essentially independent, contribution to LSMS (H4 rather than H3).

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[2] The Sobel test is an inferential comparison of the contribution of the mediated variable (in this case absorption, represented in the nomenclature used by Hayes, 2013, as X) to the output variable (in this case LSMS, Y) when the moderator variable (in this case, imagery, M) is excluded from the model (referred to as path c) versus when the moderator variable is included in the model (when path c becomes the "direct effect" component, and is relabeled path c'). The effect size is reported as κ^2. The bootstrap 95% confidence interval reports the extent to which the confidence interval of the c' path coefficient estimate overlaps with the c path coefficient estimate. That is, the success of the mediation model is based on testing the null hypothesis that $c - c' = 0$.

Table 2
Means, SD and Cronbach's Alpha Information for the Four Measures Used in the Study

Scale	M	SD	α	No. items	α without worst performing item	α without second worst performing item
RUM	43.38	8.210	.874	12	.859 (RUM10: "It is easy for me to put unwanted thoughts out of my mind")	.864 (RUM1: "My attention is often focused on aspects of myself I wish I'd stop thinking about")
LSMS	32.20	7.066	.827	11	.836 (LSMS10: "I only like to listen to sad music if it resolves happily")	.827 (LSMS9: "I often find myself grieving as a result of listening to sad music")
ABS	43.38	8.210	.879	12	.869 (ABS6: "Different colours have distinctive and special meanings for me")	.867 (ABS7: "When listening to organ music or other powerful music, I sometimes feel as if I am being lifted into the air"; ABS12: "The crackle and flames of a wood fire stimulate my imagination")
BAISV	66.125	14.016	.846	14	.854 (BAISV1: "Consider the beginning of Happy Birthday . . .")	.841 (BAISV8: "Consider attending an orchestral performance of Beethoven's Fifth . . .")

Note. When deletion of two items are shown for the same subscale, it is because the revised Cronbach's α is identical for both items to three significant figures. RUM = rumination score based on the Rumination-Reflection Questionnaire; LSMA = Like Sad Music Scale; ABS = absorption score based on the Absorption, Intellectance and Liberalism Questionnaire; BAISV = vividness subscale of the Bucknell Auditory Imagery Scale.

Discussion and Conclusion

This study examined relationships among absorption, rumination, and vividness of auditory imagery and their relationships with attraction to negative emotion in music. The measures we used were the BAISV for auditory imagery, the AIT for absorption, the RRQ for rumination, and the LSMS for attraction to negative emotion in music. Scores for each subscale used had adequate reliability based on the criterion proposed by George and Mallory (2003).

The results suggest a complex interaction of individual difference variables related to absorption, rumination, and imagery in explaining attraction to music that evokes negative emotion. Using the BAISV as an index for auditory imagery, we found that aspects of imagination are mediated by absorption, in support of H1 but rejecting H2, presumably to better allow one to engage with music that evokes negative emotion in the listener. In other words, to enjoy negative emotion in music, being able to be in a state of absorption is most important, but in addition, to be able to be in a state of absorption, a level of imaginative prowess may be exploited, such as being able to vividly imagine auditory information. Further research will be needed to verify (a) that absorption is the prime psychological mover for enjoyment of negative emotion evocation by music and (b) the contribution of other factors,

such as extraversion, to enjoying negative emotions in music and the degree to which they may be mediated. We found that rumination has an important influence upon enjoyment of negative emotion, one that is independent of absorption, in support of H4 and rejecting H3.

The cognitive theoretical position that negative emotion in music can be enjoyed when the listener is in a dissociated state (Schubert, 1996, 2013) can be applied to the current data set. The theory proposes that in the dissociated state the listener is free to enjoy a wide range of experiences. It may be that one of the factors limiting this freedom is the limits of one's imagination, explaining why imaginative aspects may be important but mediated by dissociation. Absorption has been proposed as an index of a listener's capacity to dissociate (Garrido & Schubert, 2015; Schubert, 2010). Taking together the evidence of the relationship between imagery and absorption, and the sequencing of the processes found in this study, it can be concluded that the ability to dissociate pain center activation in aesthetic contexts also facilitates one's imaginative

Table 3
Descriptive Statistics and Correlations Among the Key Variables

			Pearson correlation coefficients		
Variable	M	SD	1	2	3
1. LSMS[a]	32.20	7.07	—		
2. BAISV[b]	4.72	1.00	.161*	—	
3. ABS[c]	43.38	8.21	.383**	.358**	—
4. RUM[c]	3.22	.73	.266**	.076	.126

Note. $N = 168$. LSMA = Like Sad Music Scale; BAISV = vividness subscale of the Bucknell Auditory Imagery Scale; ABS = absorption subscale of the Absorption, Intellectance and Liberalism Questionnaire; RUM = rumination subscale of the Rumination-Reflection Questionnaire.
[a] Dependent variable. [b] Independent variable or mediator. [c] Mediator or independent variable.
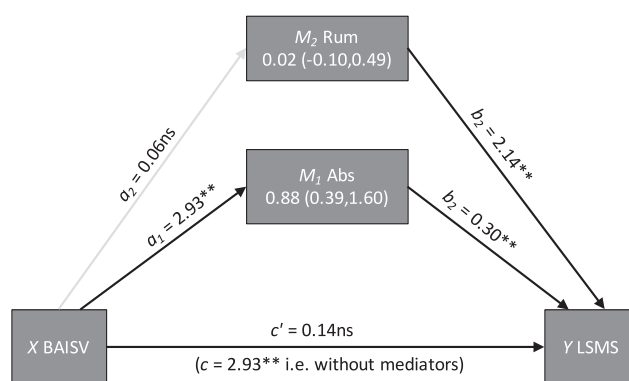* $p < .05$. ** $p < .01$.

Figure 2. Mediation analysis diagram. Notation in italics is based on Hayes (2013). Numbers in the mediation boxes are mediation coefficients ($a_i \times b_i$), followed by 95% confidence intervals. Paths show regression coefficients based on analysis performed by PROCESS macro implemented in SPSS. Rum = rumination score based on the Rumination-Reflection Questionnaire; Abs = absorption score based on the Absorption, Intellectance and Liberalism Questionnaire; BAISV = vividness subscale of the Bucknell Auditory Imagery Scale; LSMS = Like Sad Music Scale. ** $p < .01$.

propensity. Thus, previous research suggesting a link between absorption and enjoyment of negative emotion in music has been enhanced by the evidence of an imagery link. Specifically, based on the findings of this study, the chain of processing can be conceptualized as music listening leading to dissociation, with an intervening, though optional, imagery processing stage, which is then followed by the enjoyment of negative emotion.

We did not find evidence of rumination's being mediated by absorption. Garrido and Schubert (2015) found that the correlation between rumination and the LSMS dropped when controlling for absorption, although remaining statistically significant. The authors suggested that this indicated some mediation relationship. However, in the current study, which uses more robust means to explore mediation effects, we found the contribution of rumination to liking sad music to be independent of absorption. This suggests that absorption can be interpreted as an adaptive kind of attraction that acts more or less independently of the maladaptive attraction of rumination.

The study has limitations. Although data collection in a single sitting has several potential limitations, particularly in research investigating a cognitive pathway, we took some steps to reduce the amount of method bias in our design, as recommended by Podsakoff and colleagues (Podsakoff, MacKenzie, & Podsakoff, 2012). First, we used validated self-report measures, psychometric measures of the different variables of interest. Second, we chose subscales measuring each of the variables of interest from different sources. Finally, by choosing a dependent variable as being concerned with liking (liking sad music) we could reasonably justify assuming that the experiential, unvalenced (i.e., not explicitly concerned with liking or disliking) variables concerned with an eliciting situation (when listening to sad music) occurred temporally earlier in the cognitive chain of events. Future work should attempt to replicate and extend the findings by including additional variables. Different kinds of imagery (such as visual) should be investigated, as well as direct measures of imagery experiences evoked by specific musical stimuli (Sakka & Juslin, 2017). Also, the role of additional individual differences in the same model will require investigation, to see whether, for example, personality factors such as extraversion that appear to have a (negative) relationship with enjoyment of negative emotion in music do so independently, or whether absorption is the main gatekeeper of normative musical experiences. Another interesting approach would be to give objective tests of auditory imagery ability to see whether actual and reported competencies act similarly in the relationships explored here.

Overall, the findings indicate that researchers should be cautious if asserting that imagery directly contributes to pleasure or emotion derived from music listening. Imagery of one form or another may contribute, but the contribution may also be indirect. This highlights the importance of testing and applying theory when making such assertions. The present approach tested the theory that dissociation, as estimated by the trait of absorption, is a critical arbiter of musical response. Therefore, a theory proposing that imagery plays a critical role in music response might also wish to consider to what degree this is a direct, unmediated influence. We believe that this is the first study to move beyond reporting correlations between individual differences and attraction to negative emotion in music. Furthermore, the finding that absorption mediates imag-

ery expands disparate pieces of research that have argued for a role of each in responses to music.

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