

## DOCTOR OF PHILOSOPHY

### A Psychological Study of the Sacred in Metal Music Culture

Messick, Kyle

*Award date:*  
2020

*Awarding institution:*  
Coventry University

[Link to publication](#)

#### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of this thesis for personal non-commercial research or study
- This thesis cannot be reproduced or quoted extensively from without first obtaining permission from the copyright holder(s)
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

#### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

# **A Psychological Study of the Sacred in Metal Music Culture**

**KYLE J. MESSICK**

**September 2019**



**A thesis submitted in partial fulfilment of the University's requirements for the  
Degree of Doctor of Philosophy.**



## **Certificate of Ethical Approval**

Applicant: Kyle Messick

Project Title: Characterizing Extreme Metal

Date of approval: 04 December 2017

Project Reference Number: P63157

Project Title: The Effects of Sacred Metal Music on Empathy, Affect, Prosociality, and Fulfilling Psychological Functions

Date of approval: 20 September 2018

Project Reference Number: P75334

Project Title: Desecration of The Sacred in the Metal Music Community

Date of approval: 15 January 2019

Project Reference Number: P79666

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their projects have been confirmed and approved as Medium Risk

## SHORT ABSTRACT

The sacred is a quality pertaining to individual and collective systems of meaning (Knott, 2013), which is distinct from the ordinary or mundane (Durkheim 1976/1912), and is characterized by a sense of specialness or pricelessness (Taves, 2009). Through their connection to the sacred, individuals experience a range of benefits, such as finding meaning and dealing with uncertainty in life. Despite an increased interest among psychologists on the functions, effects, and loss of the sacred, the topic has seldom been explored outside of religious contexts. The aim of this thesis is to rectify this gap by exploring the sacred within a specific secular context: metal music culture.

This thesis has 3 main aims: 1) to assess the secular sacred as a special affective and cognitive experience that is distinct from what is merely good or enjoyable; 2) to study how this secular sacred experience fulfils similar psychological needs to the religious sacred, including its ability to influence levels of affect, empathy, and prosociality; and 3) to test for the potential negative impact of the secular sacred, when loss or desecration occur, within metal culture. Three studies were conducted to accomplish these goals. Metal music culture was chosen to investigate the sacred within a secular context because it might function like a religion, given its ability to provide meaning, cultural identity, rituals, and a sense of belonging (Moberg, 2012), thus making it a good candidate to explore the role of the sacred outside of religious contexts.

The first study sought to identify some of the most prominent sacred-like aspects of metal music culture (music, behaviours, cultural artefacts, and people), and found that higher levels of commitment to the metal worldview were associated with a stronger metal identity, greater engagement in metal cultural behaviours, and greater perception of prominent metal cultural figures as sacred-like. In addition to this, it was found that the affective importance of metal music was dependent on the type of metal and its consistency

with subgenre-based metal identity. Findings from the first study also laid the groundwork for understanding music cultures outside of the context of the sacred, such as by exploring the role of personality and moral reasoning in music preferences. The second study, which contrasted metal music stimuli with the most popular non-metal style of music for metal fans (hard rock), found that preferred metal music was seen as more sacred to the self, more sacred to the community, promoted higher levels of positive affect, and was significantly associated with higher levels of psychological needs fulfilment and prosocial behavioural intentions. No differences were found between the two music styles and their influence over empathy and negative affect. The third study used sacred metal artefacts to test for a potential negative experience of the sacred, focusing on loss and desecration. Its findings broadly replicated previous work that found that appraising a loss as sacred results in feelings of anxiety and depressive symptoms (Pargament, Benore, & Mahoney, 2005). Similarly, it was also found that desecrated or violated metal objects resulted in significantly higher levels of anger, when compared to sacred loss without desecration or non-sacred loss.

This thesis provides some of the earliest evidence that secular communities, such as those encompassed by metal worldviews, endow its music and artefacts with emotive and cognitive qualities similar to those of the religious sacred, and that these may likewise shape individuals' experiences positively and negatively — effects known to occur with one's attachment to sacred religious sources. I conclude by discussing the implications of this work for the psychological study of religion and metal studies.

## EXTENDED ABSTRACT

The sacred is a quality pertaining to individual and collective systems of meaning (Knott, 2013), which is distinct from the ordinary or mundane (Durkheim 1976/1912), and is characterized by a sense of specialness or pricelessness (Taves, 2009). Through their connection to the sacred, individuals experience a range of benefits, such as finding meaning and dealing with uncertainty in life. Despite an increased interest among psychologists on the functions, effects, and loss of the sacred, the topic has seldom been explored outside of religious contexts. The aim of this thesis is to rectify this gap by exploring the sacred within a specific secular context: metal music culture.

This thesis has 3 main aims: 1) to assess the secular sacred as a special affective and cognitive experience that is distinct from what is merely good or enjoyable; 2) to study how this secular sacred experience fulfils similar psychological needs to the religious sacred, including its ability to influence levels of affect, empathy, and prosociality; and 3) to test for the potential negative impact of the secular sacred, when loss or desecration occur, within metal culture. Three studies were conducted to accomplish these goals. Metal music culture was chosen to investigate the sacred within a secular context because it might function like a religion, given its ability to provide meaning, cultural identity, rituals, and a sense of belonging (Moberg, 2012), thus making it a good candidate to explore the role of the sacred outside of religious contexts.

**Chapter One** outlines the structure of the thesis, provides background, and it details the aims and objectives that were pursued. **Chapter Two** thoroughly explains the social science literature on sanctification and the sacred. Different historical ways of defining the sacred functionally and substantively are provided before giving literature about the functions and the experience of losing the sacred. It is emphasized that the existing literature on the sacred is largely within the context of religious worldviews, but that the same theoretical

framework can be applied in secular contexts too.

**Chapter Three** provides background on metal music culture and the scientific study of metal music culture. The worldview is described in terms of being ideologically secular but functionally akin to religion. There is some discussion of what forms within the metal worldview are likely to be appraised as sacred.

**Chapter Four** is the first of four chapters that cover three experimental studies, all of which used a similar survey format that recruited fans of metal music from metal-themed discussion groups on social networking websites. The first study sought to identify some of the most prominent sacred-like aspects of metal music culture (music, behaviours, cultural artefacts, and people), and found that higher levels of commitment to the metal worldview were associated with a stronger metal identity, greater engagement in metal cultural behaviours, and greater perception of prominent metal cultural figures as sacred-like. In addition to this, it was found that the affective importance of metal music was dependent on the type of metal and its consistency with subgenre-based metal identity. More specifically, the affective responses of metal fans listening to metal music were strongest for metal fans of a specific subgenre listening to their preferred metal style (e.g., death metal fans had stronger and more positive emotions after listening to death metal than other types of metal fans when listening to death metal), which laid the groundwork for exploring the sacred based on subgenre specific musical preferences in the second study. The most common metal cultural artefacts owned by metal fans were band shirts and hoodies, physical versions of metal music (primarily on compact disc), nostalgic artefacts (concert entry wristbands and ticket stubs), signed memorabilia, and metal posters that were used to decorate a metal fan's living quarters, so these would be investigated for sacred qualities in the third study. These findings were used to further explore secular sacred music and artefacts in the subsequent studies.

**Chapter Five** is an expansion of the first study (covered in the fourth chapter), that

was included as a separate chapter since its narrative is separate from the study of the secular sacred. This chapter lays the groundwork for understanding how moral reasoning styles can differ across different types of metal members, and it shows that personality traits and moral reasoning styles both explain some of the variance in lyrical preferences. These findings are discussed in the context of popular media associations between metal lyrics and behaviour.

**Chapter Six** used the first study's finding that the affective experience of metal music was dependent on the subgenre of the music and the preferred subgenre of the fan to investigate sacred music. Because of that finding, only a specific subgenre of fan was used in the sample. Death metal fans listened to a series of music clips and responded to affective, prosocial, empathy, and sacredness measures after each musical clip was played. It was found that preferred metal music (death metal) was seen as more sacred to the self, more sacred to the death metal community, promoted higher levels of positive affect, and was significantly associated with higher levels of psychological needs fulfilment and prosocial behavioural intentions than hard rock music. No differences were found between the two music styles and their influence over empathy and negative affect. This established secular sacred music as being at an experiential tier above music that is enjoyable but not appraised as sacred.

**Chapter Seven** used the identified prominent cultural artefacts in the first study to explore sacred objects. These objects were used in the context of vignettes to investigate the experience of loss when cultural artefacts were appraised as being sacred or having been desecrated when compared to losing non-sacred items. Participants described their own most sacred cultural artefacts before they read a series of vignettes and filled out measures for how they would feel following the events of each vignette. Each vignette described a person's bond with an item, and then the loss of that item. In the case of the desecration vignette, the item was desecrated because the associated musician had performed an act that was deemed unacceptable to the metal fan that possessed the artefact, thus severing the bond between the



metal fan and the artefact. Its findings broadly replicated previous work that found that appraising a loss as sacred results in feelings of anxiety and depressive symptoms (Pargament, Benore, & Mahoney, 2005). Similarly, it was also found that desecrated or violated metal objects resulted in significantly higher levels of anger, when compared to sacred loss without desecration or non-sacred loss. Included is evidence that metal fans believe that their sacred cultural artefacts are imbued with a magical quality that connects them to the musicians that the artefacts are associated with, and a belief that the artefact has magical qualities results in more severe affective consequences to the loss of that artefact.

**Chapter Eight** provides concluding remarks, implications, criticisms, and a general discussion of the thesis. This thesis provides some of the earliest evidence that secular communities, such as encompassed by metal worldviews, endow its music and artefacts with emotive and cognitive qualities similar to those of the religious sacred, and that these may likewise shape individuals' experiences positively and negatively — effects known to occur with one's attachment to sacred religious sources. I conclude by discussing the implications of this work for the psychological study of religion and metal studies.

## Table of Contents

<b>Acknowledgements .....</b>	<b>i</b>
<b>Preface.....</b>	<b>iii</b>
<b>Chapter 1: Introduction .....</b>	<b>1</b>
1.1. Background .....	1
1.2. Aims and Objectives .....	3
1.3. The structure of the thesis .....	3
<b>Chapter 2: The sacred in worldviews.....</b>	<b>5</b>
2.1. Introduction.....	5
2.2. Defining the sacred .....	7
2.2.1. Functional definitions .....	8
2.2.2. Substantive definitions.....	8
2.2.3. Operationalization of the sacred for this thesis .....	9
2.3. The secular sacred.....	10
2.4. Forms of the sacred.....	12
2.5. The psychological functions of the sacred.....	13
2.5.1. The fulfillment of psychological needs.....	14
2.5.1.1. As a mechanism that supports psychological functions as needs .....	15
2.5.1.2. Religion and the fulfillment of psychological needs.....	16
2.5.1.3. Secular worldviews and the fulfillment of psychological needs.....	18
2.5.1.4. Needs fulfilment overlap between secular and religious worldviews.....	20
2.5.2. Affect and prosocial behaviour .....	23
2.6. Sanctification theory .....	23
2.7. Sacred loss and violation .....	26
2.8. Conclusions.....	27
<b>Chapter 3: The metal cultural worldview.....</b>	<b>29</b>
3.1. Introduction.....	29
3.2. The study of metal music & culture.....	30
3.3. The global reach of a metal worldview.....	31
3.4. The metal worldview: religious or secular?.....	33
3.5. The psychological functions of the secular sacred.....	35
3.5.1. The fulfillment of psychological needs.....	35
3.5.2. Affective reactions .....	36
3.5.3. Prosociality .....	37
3.6. Sanctity and metal.....	39
3.6.1. Metal music.....	39

3.6.2. Metal artefacts.....	41
3.6.2.1. Imbued with magical qualities .....	42
3.6.3. Rituals and dances.....	43
3.6.4. Sacred symbolism in a secular context .....	45
3.6.5. Pilgrimage .....	46
3.6.6. The idolization of cultural figures.....	48
3.6.7. The identity of a metal member .....	49
3.7. Methods for exploring the metal worldview .....	50
3.8. Criticisms of metal studies literature .....	50
3.9 Conclusions.....	51
<b>Chapter 4: Characterizing prerequisites for the secular sacred.....</b>	<b>52</b>
4.1. Introduction.....	52
4.1.1. How worldview commitment and identity generate sacred behaviours.....	52
4.1.2. Metal artefacts as sacred .....	53
4.1.3. Musical experience as dependent on subgenre identity .....	54
4.1.4. Using language in a sacred-like way to describe metal musicians .....	55
4.1.5. Characterizing the personality of metal members.....	57
4.2. Method .....	58
4.2.1. Participant recruitment .....	58
4.2.2. Overview of study procedures .....	61
4.2.3. Overview of study measures .....	62
4.2.3.1. Personality measures.....	62
4.2.3.2. Metal identity .....	63
4.2.3.3. Metal commitment .....	63
4.2.3.4. Cultural behaviours .....	64
4.2.3.5. Metal artefacts.....	66
4.2.3.6. Affect measures.....	66
4.2.3.7. Religious language to idolize musicians .....	67
4.3. Results.....	68
4.3.1. Characterizing metal members through personality and subgenre identity .....	68
4.3.2. Behaviour, commitment, and identity results .....	69
4.3.3. Metal Cultural Artefacts Results.....	69
4.3.4. The emotional experience of preferred sub-genre results .....	71
4.3.5. Religious language & idolization results .....	76
4.4. Discussion and conclusions .....	77
<b>Chapter 5: Further characterizations: moral foundations and lyrical preferences .....</b>	<b>82</b>

5.1. Introduction.....	82
5.1.1. The relationship between metal music and behaviour .....	83
5.1.2. Explaining the lyrical scapegoat: Moral panic theory.....	87
5.1.3. Moral reasoning and media consumption .....	90
5.1.4. The current study .....	92
5.2. Materials and measures.....	93
5.2.1. Measuring metal lyrical preferences .....	94
5.3. Results.....	96
5.3.1. The relationship between type of metal fan and moral foundations .....	96
5.3.2. Moral foundations as explaining the variance in lyrical preferences.....	97
5.4. Discussion.....	102
<b>Chapter 6: The effects of music within a secular sacred worldview .....</b>	<b>108</b>
6.1. Introduction.....	108
6.1.1. The sanctity of music .....	109
6.1.2. Music, empathy, and prosociality .....	109
6.1.3. Music and the fulfilment of psychological needs .....	110
6.1.4. Psychological needs & prosociality .....	111
6.1.5. Distinguishing enjoyable music from sacred music.....	111
6.1.6. Hypotheses.....	112
6.2. Method.....	113
6.2.1. Participant recruitment.....	113
6.2.2. Overview of study procedures .....	114
6.2.3. Overview of study measures and statistical analysis .....	114
6.2.3.1. Song selection .....	115
6.2.3.2. Sacred to the self and the community .....	115
6.2.3.3. Affective measures.....	115
6.2.3.4. Prosocial and empathy measures .....	116
6.2.3.5. Psychological needs from music.....	116
6.3. Results.....	117
6.3.1. Sanctity to the self and the community .....	117
6.3.2. Affective results .....	119
6.3.3. Prosociality and empathy results.....	119
6.3.4. Psychological needs results.....	120
6.3.5. Contributors towards the perception of sacredness.....	120
6.5. Discussion and conclusions .....	121
<b>Chapter 7: Loss and Desecration of the Secular Sacred .....</b>	<b>124</b>

7.1. Introduction.....	124
7.1.1. Sacred Artefacts .....	125
7.1.2. Sacred Loss & Desecration Appraisals .....	125
7.1.2.1. Research on sacred loss & the violation of the sacred .....	126
7.1.2.2. Real-world applications of the violation of the sacred.....	127
7.1.3. Internalized & Externalized Affective Reactions .....	128
7.1.4. Artefacts with magical qualities.....	128
7.1.5. Hypotheses .....	129
7.2. Method .....	129
7.2.1. Participant information .....	129
7.2.2. Overview of study procedures .....	130
7.2.3. Overview of study measures .....	131
7.2.3.1. Establishing sacred artefacts .....	132
7.2.3.2. Appraisal measures & vignettes.....	132
7.2.3.3. Affective measures.....	134
7.2.3.4. Magical essence measure .....	135
7.2.3.5. Exploratory measures.....	135
7.3. Results.....	135
7.3.1. Artefacts established .....	136
7.3.2. Appraisal results.....	136
7.3.3. Affective results .....	137
7.3.4. Magical essence of artefacts results .....	138
7.3.5. Exploratory results .....	138
7.4. Discussion and conclusions .....	139
<b>Chapter 8: General discussion.....</b>	<b>142</b>
8.1. Main findings .....	142
8.2. Implications.....	144
8.3. Expected reactions .....	145
8.4. Limitations .....	148
8.5. Future directions .....	148
8.6. Conclusions.....	149
<b>References.....</b>	<b>151</b>
<b>Appendices.....</b>	<b>193</b>
Appendix 1 artefact List.....	193
Appendix 2 metal cultural behaviours .....	195
Appendix 3 metal identity scale.....	198

Appendix 4 metal commitment & salience in metal commitment scales .....	199
Appendix 6 emotions from music .....	200
Appendix 7 religious language to describe musicians .....	202
Appendix 8 sacred to the self and sacred to the death metal community .....	203
Appendix 9 positive & negative affect schedule.....	204
Appendix 10 prosocial behaviour intentions scale.....	205
Appendix 11 social generativity scale .....	206
Appendix 12 empathy quotient.....	207
Appendix 13 psychological functions fulfilled by music .....	208
Appendix 14 most sacred metal cultural artefact.....	209
Appendix 15 sacred loss, desecration, & non-sacred loss vignettes .....	210
Appendix 16 nontheistic sacred loss & nontheistic desecration scales.....	212
Appendix 17 shortened CES-D depressive symptomatology .....	213
Appendix 18 anger and anxiety from state-trait anger expression inventory .....	214
Appendix 19 magical essence scale.....	215

## Acknowledgements

The years working towards this thesis have been gruelling and arduous, and so I want to thank those that have helped me on this journey:

My grandparents, Robert and Jerry Green, for always believing that there was no limit to what I could accomplish in life. Even after Bob passed, I continued to feel his push to succeed. I could not have done this without you helping craft me into who I am today.

Dr Miguel Farias for helping me think in new ways, and for helping me become a stronger writer and researcher, and for taking me on as a student.

Dr Jonathan Jong for being the perfect counterpoint to Miguel, which allowed me to see two perspectives and find my own way somewhere in-between them.

Dr Valerie van Mulukom for letting me rant to her, particularly during my first year.

Dr Kevin Ladd for inspiring me to pursue what was important to me, instead of what I perceived as important to others.

Blanca Aranda for her love and support through the ups and downs of the last few years, and for her feedback on countless drafts of everything I wrote.

Maria Gonzalez for supporting Blanca and myself as we lived in a foreign country.

Tommy Coleman III for agreeing to work together to adapt to living in a new country, and for always being there in times of need.

My dad and Carol for giving me a home to accumulate funds to pursue this PhD, and for letting me keep my abundance of stuff at their house while I was living in England.

Everyone that hired me to do artwork over the last few years, your funding really helped me out of some tight spots.

Chris Cotter and the Religious Studies Project, and Heidi Frølund Pedersen and the International Association for the Psychology of Religion, for creating new opportunities for me throughout the last few years.

The Brain, Belief, and Behaviour Lab (BBB) and the Social Psychology of Religion Lab (SPRL) for both giving me opportunities to grow and for allowing me to contribute to something I find meaningful.

Bryan Coffey and everyone at Indy Metal Vault, for letting me write some fun stuff that was a welcome break from more intense, peer-reviewed writing.

Alex Watt and Melissa Watt, Jeff Davis, Fallon VønSønn, and Chris Pawlowski for the images that you have been provided that have been included in this thesis.

James Farrimond, for being the only sane person in an insane situation.

My co-authors on other things, Blanca Aranda, Tommy Coleman III, Sarah Charles, James Bartlett, Alex Uzdavines, Joseph Langston, Konrad Szocik, and Miguel Farias because working is always more fun with company.

To all the friends I've made in England (including Matthew Rowe, Sarah Charles, James Bartlett, Nneoma Ukandu, Carla Cheryl, Chris Day, etc.), it can be hard to start over in a new place, and you all made it easier. And Byron van Hoop, you might not live in England, but you've been a great friend over the last few years too. It was great hanging with you on every Netherlands Deathfest excursion.

All of my students over the last three years. It was an absolute joy teaching you, and your positive feedback frequently gave me a morale boost during turbulent moments of the PhD.

All of my friends in the metal community for being a constant source of positive support and love, with special thanks to Melissa, Alex, Eric, and Justine for watching over my precious metal collection while I was overseas.



## Preface

I worked in psychology of religion research laboratories off and on for fourteen years, and although I've been a lifelong fanatic of metal music ever since I first heard the music as a child, this thesis is the first instance where my academic life and my personal life as a metal fan have intersected. My thesis did not start off being about metal culture and the metal worldview, and because of that, it was an excruciating task to invest myself in. Pursuing a PhD, in my instance, involved moving to a new country I had only ever briefly visited, adapting to that country, and then tirelessly working without getting paid for it. At the end of my first year, after the difficulty of finding housing, and pursuing a goal that felt unachievable, I had run out of money, and I was in a dark place. I increasingly read articles about the emotional difficulties that come with pursuing a PhD, and these were confirmed by the evidence around me. Many of my colleagues were similarly struggling through depression and financial woes, and I had been informed that one colleague took a break from pursuing the goal after an attempt to end their own life. I did not take this struggle lightly. At the end of my first year, I gave a presentation at an international conference that was well-received, and afterwards, someone approached me. They noted that I was a dedicated metal fan, and wondered why I was not studying metal music culture. I was taken aback, since the thought had never crossed my mind. This was the turning point in my life and in my thesis. I quickly consumed everything I could on the scientific study of metal culture, and I found one glaring omission: the psychology of metal. This inspired me to apply my background in the psychology of religion in the context of metal, and for the years that followed, I was focused and worked diligently and passionately on this, one of the first psychological works on metal music culture. With the help of my supervisors, I feel that I've found my niche in academia, and although this thesis is not a perfect work, I am proud of what has been accomplished here, and I hope that it is an interesting read to both religious and metal scholars alike.

## Chapter 1: Introduction

### 1.1. Background

Psychological and social research has shown that the relationship people have with the sacred is complex, multi-faceted, and emotionally intense; the reverse side of which is that the loss of the sacred can be emotionally devastating. Recent scholarship has suggested that the sacred, as a special quality in individual and collective systems of meaning, need not happen only within a religious milieu (Knott, 2013). Although the sacred has historically been associated with religion and religious belief, it is increasingly being investigated within non-religious contexts. Consistent with the notion that the sacred can exist for the non-religious, it is being increasingly documented that non-believers are spiritual and experience that spirituality in ways similar to their religious counterparts. For example, today many people in the West classify themselves as spiritual but not religious, a classification which has been found to be associated with distinct personality traits and beliefs (Saucier & Skrzypińska, 2006), though it isn't always clear how spirituality and religion diverge or converge (Kadar et al., 2015; Ammerman, 2013). One particular example of spirituality outside of religion is the bond that people have with nature, which is described by some as a spiritual connection with nature (Pew Research Center, 2012). One further illustration is how atheists have been found to experience awe, an experience that was historically assumed to be inextricably associated with religion (Caldwell-Harris, Wilson, LoTempio, & Beit-Hallahmi, 2011).

The functions, facets, and roles that are traditionally associated with religion are not exclusive to religion. For example, people that are not religious find meaning in life (Schnell & Keenan, 2011) and they have a spirituality that includes a non-deistic belief in the sacred (Schnell & Keenan, 2013). The sacred outside of religious contexts has been called the 'non-theistic sacred' (Pargament & Mahoney, 2005a) or the 'secular sacred' (Knott, 2013). In this

thesis I will use this latter term when referring to the sacred outside of a religious context.

Despite this initial conceptual work in identifying the secular sacred, there hasn't been any consistent assessment of whether the secular sacred might play similar psychological roles and functions to those found with religious beliefs and rituals, including potential adverse effects when there is a loss or violation of the sacred. In order to test this, I chose to focus on metal music culture as a particular case of the secular sacred, because despite being non-religious, it has ritual-like behaviours and symbols that mimic religion. For instance, the association between metal music culture and religious iconography goes back to heavy metal's origins with Black Sabbath, who frequently featured crosses on their album covers and during their live performances. Now, half a century after Black Sabbath formed, crosses continue to be prominent symbols in metal music culture, even though the majority of bands

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

Black Sabbath's Tony Iommi is well known for wearing crosses when he performs on stage.  
Photo by Thomas Lohnes/Getty Images for Gibson

and fans that embrace the symbol are not religious, or at least not in the Christian sense of the word. The parallels between metal culture and religion extend beyond shared symbols too. Metal concerts often have parallels with Catholic mass and other religious rituals, and in

some more extreme examples, as is the case with black metal bands like Watain and Batushka, their concerts are even referred to (by the band) as rituals, even though both bands openly disavow deist religions.

## 1.2. Aims and Objectives

The goal of this thesis is three-fold: 1) to assess the secular sacred as a special affective and cognitive experience that is distinct from what is merely good or enjoyable, 2) to examine whether the secular sacred fulfils similar psychological roles and functions to the religious sacred, such as promoting positive affect, prosociality, and empathy; 3) to understand the negative affective impact of secular sacred loss or its violation (i.e. desecration). Together, these aims seek to develop the first thorough, empirical investigation of the sacred outside of religious contexts. Although there have been previous attempts to look at specific secular beliefs, such as belief in progress or belief in science (Farias, Newheiser, Kahane, & de Toledo, 2013; Rutjens, van Harreveld, & van der Pligt, 2010) and how these may fulfil similar psychological functions to those of religion, to the best of my knowledge this is the first psychological examination of a secular culture along these lines, which means that I am not looking at a set of beliefs but a whole set of rituals and artefacts that might mirror those of religion.

## 1.3. The structure of the thesis

This thesis includes two chapters of theory and literature background, four chapters with empirical data, and a general discussion chapter. The trajectory of the research moves from more abstract representations of the sacred and culminates with more tangible forms. The second chapter gives background and definitions about the sacred and how it functions. Because this thesis investigates the sacred within a secular context, when it is usually investigated strictly within religious contexts, chapter two compares and contrasts religious and secular worldviews, building towards a framework that shows how both worldviews

might fulfil similar psychological functions. The second chapter also identifies characteristics of the sacred, how people relate to it, and the way people experience the loss or violation of the sacred.

The third chapter focuses on the specific secular worldview of metal music culture. I provide a background on the history of metal music studies and justify why this is a potentially fruitful starting point for exploring the secular sacred.

Chapters four, five, six, and seven consist of data from three empirical studies. The first study characterizes metal fans and builds a framework which allows for the development of future studies on secular sacred behaviours, music, objects, and people. Two of those areas are explored in the subsequent studies of this thesis using the identified key metal artefacts, as well as how preferred metal music has a role in shaping levels of affect. Chapter five provides additional data collected in the initial study, which used personality traits and moral reasoning styles to explain the variance in media preferences, specifically for preferences for different thematic content within heavy metal lyrics. Study 2 (Chapter 6) explores how secular sacred metal music uniquely improves affect, prosocial behaviour, and assists in the fulfilment of psychological needs. The last study (Chapter 7) focuses on the experience of sacred loss and its violation, by using key metal artefacts identified in the first study. Included with the last study was a measure of the magical qualities of sacred metal objects to confirm that sacred artefacts, even in a secular culture, are assigned magical properties.

The concluding chapter puts these results into the context of two bodies of scientific literature (psychology of religion and metal studies), noting the similarities between the findings of these studies and what has been investigated for the religious sacred.

## Chapter 2: The sacred in worldviews

### 2.1. Introduction

The sacred is a quality pertaining to individual and collective systems of meaning (Knott, 2013), which is distinct from the ordinary or mundane (Durkheim 1976/1912), and is characterized by a sense of specialness or priceless (Taves, 2009), and timelessness (Pargament, Oman, Pomerleau, & Mahoney, 2017). It is often described as having a perceived divine character and significance (Pargament & Mahoney, 2005a). Because the sacred is a broad topic, this chapter is divided into six sections to broadly encompass the theory and the application of the concept. The sections cover 1) definitions, 2) the secular sacred, 3) forms, 4) functions, 5) the application of sanctification theory, and 6) the loss and violation of the sacred. This thesis draws distinctions between the sacred for people who are religious and people who are not (e.g., many metal music fans), so I would like to begin by introducing two key terms that I'll be using. First, I will define the concept of 'worldview' as a more neutral term that can be applied to both secular and religious belief systems in addition to the term 'metal member' which will act as a shorthand to refer to members of the metal music community that hold the metal worldview.

There has recently been a push towards classifying communities of people based on worldview instead of religion, ethnicity, or solely by some other identifier (Taves, Asprem, & Ihm, 2018). The term was originally proposed as a way of incorporating both religious and non-religious outlooks, while avoiding the complicated necessity of trying to define religion and non-religion, and as Taves (2018) further explained, it applies well when addressing important questions about existential philosophies, and is already a term that has received widespread use in the social sciences and within philosophy. This is a helpful term when it comes to studying metal music culture too, as it avoids the baggage and operational problems that arise from comparing groups based on the category of belief alone. Worldviews are

“different manifestations of the same, incredibly broad, psychological [meaning-making] processes” (Murphy, 2017); further, they are the “socially constructed realities humans use to frame perception and experience” (Johnson, Hill, & Cohen, 2011, p. 138). A worldview encompasses culturally influenced sense and meaning making schemas that influence how a person will live their life and how they interact with fundamental aspects of reality.

Worldviews help identify the role of cultural content in meaning making. A worldview includes one’s views about epistemology, metaphysics, cosmology, teleology, theology, anthropology, and axiology (Funk, 2001). This terminology has been increasingly utilized recently in the investigation of non-religious peoples (Coleman III & Jong, 2019; Coleman III, Hood, & Streib, 2018; Jerotijević & Hagovská, 2019; Taves, Asprem, & Ihm, 2018; Thurfjell, Rubow, Rimmel, & Ohlsson, 2019), but it is largely the result of a reinvigorated debate about definitions and terminology (Smith & Cragun, 2019), so the longevity of this term isn’t yet clear. ‘Worldview’ has also been criticized because its use of the term over ‘religion’ might underplay important cultural contestations and processes, such as rituals, depending on the definitions used (Johnston, 2018). ;However, the term ‘worldview’ has less conceptual murk when examining secular cultures, so I have chosen to use it in this thesis.

Metal music culture is a worldview that is largely secular as most metal fans are non-religious (Aarons, 2018), particularly among fans of extreme subgenres like death metal (Baka, 2015; Hill, 2013; Swami et al., 2013; Arnett, 1991). However, it is a culture with rituals (e.g., metal concerts), dances (e.g., moshing, headbanging), and symbols (e.g., ‘the horns’) that mirror those of religious worldviews. To stay consistent with using terminology in terms of worldviews, this thesis uses the term ‘metal member’ in place of ‘metal fan’ to emphasize that these individuals are devoted members to a culture and worldview (i.e. they are ‘members’ of the metal worldview), which differentiates them from other types of fans, such as sports fans.

## 2.2. Defining the sacred

Research on the sacred is continually troubled by one major issue: the inconsistency in definition. Most research papers about the sacred do not even include a definition for the term (Harris, Howell, & Spurgeon, 2018). On the other hand, it is a construct that has received multiple definitions and typologies, some of which are explored here. The scientific study of the sacred largely stems from Durkheim's works that made a distinction between the sacred and the mundane (Durkheim 1976/1912). For Durkheim, the sacred represented the exceptional, something which had absolute value, and that had the function of maintaining cohesion within a society. Durkheim's approach to the sacred is not necessarily constrained by the boundaries of religion, and thus it has been applied to broader concepts like spirituality, superstition, and mysticism (Hill et al., 2000). However, definitions that are too broad also make the empirical investigation of these constructs nearly impossible, so there has been an effort by psychologists to measure the qualities of the sacred, to further ground the concept empirically (Paloutzian & Park, 2013; 2005). To elucidate, Paloutzian and Park noted that much of the research on religion relies on the sacred as being a unique characteristic of religion, when in reality, the sacred is a term used to describe a wide array of attributes that are not uniquely religious, spiritual, or sacred. Rather, they are attributes that can be ascribed to any of those descriptors depending on the person or culture. Due to the broad range of phenomena that the sacred can encompass, using the sacred to define religion is far too vague to make concrete and empirical claims about it, in particular to the uniqueness of religion. This thesis avoids the theoretical problems that arise from associating such a broad set of descriptors strictly to religion, and instead, studies the sacred as a quality that can be ascribed to worldviews outside of religious contexts too. Before returning to the definition that is used in the context of this thesis, some background is given on two types of definitions that are frequently applied to the sacred: functional and substantive.



### 2.2.1. Functional definitions

Today's functional definitions of the sacred build off of William James' pivotal work, *The Varieties of Religious Experience* (1902). Demerath, for example, (2000) broadened his definition from that of James and Durkheim, thus defining the sacred in terms of functionality, stating that the sacred could be integrative, quest, collectivity, or counter-culture. Some examples of the sacred as integrative, from a religious context, might include socialization rituals and/or rites of passage, such as baptism, communion, and conversions. These are transformative functions that mark important points within a given worldview. The sacred as quest involves seeking new meanings and experiences, which serve as a path to learning and enlightenment. Pilgrimages are examples of quest. In a secular, metal context, a sacred metal pilgrimage might be something like a trip to Wacken Festival, the world's largest annual metal music festival. The third type, the sacred as collectivity, is about institutions. This is any religious community or similar group that is held in similar esteem by the individuals that compose it. Collectivity functions are consistent with socially-driven needs. Lastly, the sacred can function as a counter-culture. These are movements, organizations, and communities that offer a distinct and sometimes aggressive alternative to the societal mainstream. In the context of metal music cultures, this is an important distinction of the sacred, since metal culture is distinctly and often aggressively different from what is popular and acceptable in society as a whole (Vasan, 2016).

### 2.2.2. Substantive definitions

The substantiation of the sacred is a more modern approach to describing the sacred, which stemmed from ethnological and sociological attempts to describe the sacred in a more tangible way (Righetti, 2014). Engler and Gardiner (2017) suggested that there were four scholarly perspectives on the sacred: the ineffable sacred, the experienced sacred, the polarized sacred, and the contextualized sacred. The ineffable sacred pertains to a quality that

cannot be conceived or expressed using language. It is an ontological phenomenon that transcends signification, so this approach to the sacred is one that is difficult to measure or approach empirically. The experienced sacred is about subjective feeling, therefore the idea is that an out-group that has not experienced the sacred will not be able to grasp the sacred experience of an in-group. What is sacred to one group or individual might not be sacred to another group or individual. To give a specific example, something like church music might be a transcendent experience to some but would feel like an ordinary experience to others. The ineffable sacred and the experienced sacred are often used together, since the sacred can be both experiential and indescribable. The fourth and final type of the sacred identified by Engler and Gardiner is the contextualized sacred. This version of the sacred is an alternative to the binary third type, as it captures the sacred as occurring in relationship to other concepts. The sacred, in this case, takes place in a specific cultural, historical, and intellectual context, so the key to understanding it is its relationship to that context. Something is contextualized as sacred once it has been interpreted through a semantic network in relation to other concepts. In the case of heavy metal music culture, an artefact of the culture might be perceived as sacred if it has great importance and influence in the context of metal cultural history (e.g., a highly influential album). Of these two approaches to the sacred, this thesis takes a more functional approach, measuring the sacred by what it *does* as much as how it is *perceived*.

### 2.2.3. Operationalization of the sacred for this thesis

The different definitions for the sacred are not mutually exclusive, and in this thesis a broad definition will be used that encompasses different types, particularly the sacred as a special (non-mundane) quality in individual and collective systems of meaning (Knott, 2013), which is characterized by a sense of specialness in which it is believed that some things are priceless or incomparable (Taves, 2009) and timeless (Pargament, Oman, Pomerleau, &

Mahoney, 2017). The main focus of this thesis will be on how the sacred functions and is experienced by members of secular cultures, particularly metal culture. Due to this, the semantics surrounding the term 'sacred' aren't as crucial as being able to identify the sacred as being a unique affective and functional experience. The potential properties of which are explored further in this chapter.

### 2.3. The secular sacred

The sacred has been traditionally associated with religion, both emotionally and cognitively, but despite an increased interest among psychologists on the functions and experience of the sacred, this topic has seldom been explored outside of religious contexts. Although some secular topics have been explored in regards to the sacred, these are usually undertaken using a religious lens (e.g. the secular as theistically 'sanctified'). Examples of this academic perspective include health care interventions (Lundmark, 2016), work (Backus, 2015; Carroll, Stewart-Sicking, & Thompson, 2014), social justice (Todd & Odahl-Ruan, 2014), marriage (Kusner, Mahoney, Pargament, & DeMaris, 2014; Ellison, Henderson, Glenn, & Harkrider, 2011; Rusu, Hilpert, Beach, Turliuc, & Bodenmann, 2015), the body (Jacobson, Hall, & Anderson, 2013), sex (Hernandez, Mahoney, & Pargament, 2011), parenting (Volling, Mahoney, & Rauer, 2009; Murray-Swank, Mahoney, & Pargament, 2006) learning (Phillips & Kitchens, 2016), and dreams (Phillips & Pargament, 2002).

Increasingly, however, researchers are taking note that people are sensing the sacred outside of religious contexts. For example, most people report having a spiritual connection with nature, regardless of their religiosity (Pew Research Center, 2012). Pargament and Mahoney alluded to this with their nontheistic sacred, which, nonetheless, was heavily rooted in religious language, and made me look for alternative ways of describing the existence of the sacred for individuals that are not religious. Some influential thinkers have coined various terms that could be used to describe the sacred in secular contexts, including theologian

Rudolf Otto, who spoke of a “wholly other” that was an experience unlike anything experienced in ordinary life. This is consistent with Durkheim’s description of the sacred, though Otto referred to this as the *numinous* (1923). Otto said that the numinous provokes reactions of silence, awe, or terror, consistent with what Goldman (2009) described as reactions to the sacred. The numinous can be described as having a spiritual quality suggesting the presence of divinity, which is consistent with Pargament’s definition of the sacred. Although Otto’s numinous by definition could apply to secular contexts, it doesn’t yield easily to studies of the sacred, as Otto emphasized potential negative affective reactions, such as feelings of terror (Cheyne, 2001).. Ann Taves has suggested the more neutral term ‘specialness’ as being synonymous with the sacred, which she used to avoid the confines of religious language (Taves, 2009, pp. 162–63).

Other scholars, such as Kim Knott, have built on Taves to arrive at a slightly different terminology Knott’s alternative to ‘nontheistic sacred,’ ‘specialness,’ and ‘numinous’ is the term ‘secular sacred’ (Knott, 2013). He defines the secular sacred as:

Beliefs, values, practices, places, symbols and objects that are formally speaking ‘non-religious’ but are nevertheless prioritized by people, deemed to be inviolable and non-negotiable, and often referred to as ‘sacred’.(Knott, Poole, & Taira, 2016, p. 11).

Knott specifically addressed the descriptions of ‘specialness’ by Taves (2009), and argued that there is still value in investigating the extraordinary in terms of its sacredness, as the term “sacred” is still more commonly used in extreme scenarios of life and death, by the secular and the religious alike, than a more general term like ‘specialness’ that can apply in lesser, more ordinary scenarios (Knott, 2010). I will use this term throughout the thesis to refer to the secular outside of religious contexts, in such a way as to: 1) identify the sacred at a cognitive and affective level, 2) to identify the sacred through its influence on psychological

functions, including affect, prosocial behaviour intention, and empathy, and 3) to identify the negative impact of the sacred when a loss or its violation occur. The first and second points are explored in the second study of this thesis (chapter 6), and the final in the third study (chapter 7). Although this thesis seeks to identify characteristics of the secular sacred based on those of the religious sacred described by researchers such as Pargament, this doesn't mean that there is a perfect overlap between the secular and the religious sacred. There are, of course, some differences: for example, the extraordinary perception of an object or event might be perceived in the religious sacred as the consequence of a divine being, an interpretation which would not occur for the secular sacred. More likely, in a secular context, an exceptional outcome would be perceived as the result of another explanation, such as luck (Cragun & Sumarau, 2015).

#### 2.4. Forms of the sacred

Objects that individuals, groups, or societies view as indispensable and priceless are regarded as sacred (Taves, 2009). In many secular societies this can include historic monuments, public lands, burial sites, state museums, artefacts, and symbols of office. In a religious context, they can be objects like a rosary or religious text, or a ritual such as Roman Catholic mass. Anything can be perceived as sacred to an individual or group, including material objects, time and space, events and transitions, cultural products, people, psychological attributes, social attributes, and social roles (Pargament & Mahoney, 2005a). In the context of metal culture, it might include things like the horns hand gesture, an individual's battle jacket, first pressings of certain albums or articles of clothing, or synchronous dances like moshing and headbanging. Sacred objects are unique because people treat them differently from other objects (Pargament, Magyar-Russell, & Murray-Swank, 2005). And some sacred objects facilitate other forms of the sacred, such as objects that are essential in rituals (Greene, 1992). Sacred symbols are used to extend communication and

coordination of social relations across time and space (Alcorta & Sosis, 2005), so in the case of the metal horns symbol, where a person's hand is in a fist with only the index and pinky finger extending outwards, it is likely used as a gesture of social relatedness to connect to other in-group members. Metal fans are also defensive of these potentially sacred symbols, as instances where celebrities use metal iconography for 'fashion' instead of 'passion' are met with anger and vitriol by metal members (Pasbani, 2019). The forms that this study investigates or lays the groundwork for include secular sacred behaviours, objects, music, and people.

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

A metal member getting married wearing his battle vest.

A metal member made battle jackets for her cats.

The selection of a back patch is of utmost importance.

A metal member using 'the horns' hand gesture.

## 2.5. The psychological functions of the sacred

Scholars have described the functions of the sacred in different ways. For instance, LaMothe (1998) argued that sacred objects help in providing a sense of identity and social cohesion, as well as supplying comfort and security during periods of anxiety or turmoil. Further, Boyce-Tillman (2017) described the sacred as a special connection with something beyond the self and specifically made the case that a pilgrimage can be used as a tool for developing one's identity. A major focus of this thesis is to assess the functional impact of the secular sacred on individuals. As Jones (1991: 123) emphasized, the sacred is a

contributor towards the fulfilment of social and psychological functions. It is difficult to ascertain in the literature where the sacred ends and where religion begins, so it is many of the functions of religion that are included here as candidates for the functions of the sacred. The following section will break this down in greater detail by exploring both religious and non-religious worldviews in relation to psychological needs. One example that is relevant to metal music culture is the research showing that individuals who hold on to something as sacred have less anxiety over death (Kesebir, 2009; Soenke, Landau, & Greenberg, 2013); other research suggests that metal music can help curb death anxiety (Kneer & Rieger, 2016) — so it may be the case that metal culture helps to buffer death anxiety because it is perceived as sacred by its members. After discussing psychological needs in detail, I will summarise the evidence for the association between the sacred and positive affect, and the sacred and prosocial behaviour.

### 2.5.1. The fulfillment of psychological needs

Religious worldviews can provide for epistemic and existential needs, such as control, meaning, purpose, and addressing death (Clark, 2014); however, that does not mean that these needs go unfulfilled for non-religious individuals. Secular worldviews can provide non-believers with other ways of fulfilling such needs, including via science, art, humanist philosophy, a belief in progress, socio-political institutions, and through seeing evolution as a predictable and orderly process, among others (Galen, 2017). This section will explore the relationship and similarities between religious and secular worldviews, focusing on how these worldviews espouse a sense of sacredness that can fulfil various psychological needs. Due to the limited research focusing on psychological needs in regards to the sacred, this section will more broadly encompass the psychological needs literature, so that these needs can later be explored for their relationship with the sacred in the subsequent studies.

### *2.5.1.1. As a mechanism that supports psychological functions as needs*

A psychological need can be defined as a powerful drive that orients choices and behaviour. The psychological literature in this area originates with Freud's works on the life and death instincts (1920), includes Maslow's hierarchy of needs (1943), and more recent work like Deci & Ryan's self-determination theory (2011). The psychological needs listed can be categorized into six broad types: 1) forward-driving needs, 2) meaning, morality, & causal attribution-making, 3) mental & emotional well-being, 4) self-enhancement, 5) socially-driven needs, and 6) stability, control, security, and dependence (see table 1 for an outline).

Forward-driving needs encompass any needs that fulfil an active drive for achievement and mastery. These needs are focused around the pursuit of goals, the need for achievement, and the desire to master skills. The second category focuses on meaning, morality, and attribution making. The fulfilment of these needs help individuals find meaning and provide them with a moral compass to dictate behaviour. The third category is mental and emotional well-being. These focus on helping cope with anxiety and negative affect, and also help bring a state of positive affect, optimism, and/or peace. These needs help manage stress and dealing with depression and death salience, as well as promoting emotional well-being. The fourth category of needs concern the improvement of the self through self-enhancement, self-actualization, self-approval, and viewing one's own body image in a positive light. The fifth category is that of socially-driven needs. These are linked to prosocial behaviour, and satisfy the need for social support and belonging. Lastly, there are the needs associated with a sense of stability, control, security, and establishing an independent identity. These six categories of psychological needs are explored below in how they interact or are met by religious and secular worldviews.



<b>Theory</b>	<b>Definition</b>	<b>Needs Included</b>
Forward-driving needs	Needs that fulfil an active drive for achievement and mastery.	Goal pursuit, life instinct, ambition, information, need for achievement, competence, mastery
Meaning, Morality, & Causal Attribution-making	Sources of meaning, morality, and the ability to make causal attributions about events.	Meaning, morality
Mental and Emotional Well-Being	Positive affect, optimism, stress & anxiety alleviation	Accessibility of emotions, life satisfaction, managing death anxiety, managing depression, positive affect, reduced suicidal ideation, self-esteem, stress management, optimism, peace, well-being
Self-enhancement	All needs that are focused on the improvement of the internalized self	Body image, self-actualization, self-approval, self-enhancement, general identity
Socially-driven needs	Need for community, social support, prosociality	Communion, prosociality, social support, affection, social belonging, relatedness, interpersonal relationships
Stability, Control, Security, and Independence	All needs that address stability, a sense of control over one's own life, and a sense that one is his/her own person.	Autonomy, control, security, self-efficacy, self-control, power, being effective in the world, dictating own behaviour, individual identity

Table 1. *Six Categories of Psychological Needs*

### *2.5.1.2. Religion and the fulfillment of psychological needs*

Religious worldviews have been associated with the fulfilment of psychological needs in all six categories defined above. The literature includes much on the functions of religious belief, such as how it helps with mood maintenance (Watts, 2007). More specifically, it helps cope with stress (Ano & Vasconcelles, 2005), depression (Smith, McCullough, & Poll, 2003), and suicidal ideation (Wu, Wang & Jia, 2015). It encourages prosociality (Friedman & Jack, 2018; Shariff, Willard, Andersen, & Norenzayan, 2016), and promotes self-enhancement

(Sedikides & Gebauer, 2010). It isn't necessarily the case that a religious worldview plays a direct role, but rather an indirect role in satisfying a certain need. For instance, a religious worldview can help provide meaning in life, which in turn improves well-being (Steger & Frazier, 2005).

Holding a religious worldview has been found to provide a number of coping mechanisms. For instance, perceiving and believing in an omnipresent god can help combat feelings of loneliness, though primarily for women (Kirkpatrick, Shillito, & Kellas, 1999). It has also been found that different types of prayers can help cope with various stressors in life, e.g. meditative and centering prayer can be devices used as an outlet to shift the burden of stress from the individual unto a higher power (Ladd & Spilka, 2002; Spilka & Ladd, 2012). Some individuals believe that their faith can bring them literal healing (van der Watt et al., 2018). Humans have anxiety about death, and many resolve that anxiety through a belief in a literal immortality, which helps reduce death anxiety by believing in life after death (Harding, Flannelly, Weaver, & Costa, 2005). For these individuals, symbolic immortality is not enough (Conn, Schrader, Wann, & Mruz, 1996). It should be noted that there are many more examples of the coping mechanisms that religion provides, so these examples should not be considered exhaustive.

A religious worldview is associated with other psychological needs, such as autonomy and self-actualization. For some women, their faith can lead to higher levels of autonomy (Agadjanian & Yabiku, 2015). On the other hand, for new religious movements which are often radical in philosophy and behavioural norms, individuals do not show an increase in autonomy; nonetheless, the closely-knit nature of these groups can provide social support, meaning, self-esteem, and self-control (Buxant & Saroglou, 2008). Members of these groups are more confident in their religious beliefs than the general population (including when compared to other religious populations), so this boost satisfies their needs for social-support,

meaning, and self-esteem, but at the cost of personal autonomy.

Certainty can go hand and hand with denominational loyalty, and denominational loyalty can lead to self-actualization (Lindskoog & Kirk, 1975). Different aspects of religious belief, such as having a strong religious identity, can lead to higher levels of self-esteem, well-being, positive affect, moral self-approval, and more meaning in life (Davis & Kiang, 2016; Sanders et al., 2015). Religious belief can satisfy forward-driving needs, well-being, and autonomy through motivational mechanisms (Martos, Kézdy, & Horváth-Szabó, 2011). Religion provides motivation to pursue goals through transcendental religious motivation and normative religious motivation. Transcendental motivation happens through a relationship with the sacred, whereas normative motivation occurs by following church and community restrictions for behaviour. While transcendental motivation entails greater autonomy and leads to higher levels of well-being, normative motivation allows for a greater satisfaction of socially-driven needs.

#### *2.5.1.3. Secular worldviews and the fulfillment of psychological needs*

People that follow secular worldviews usually fall under the umbrella terms of agnostics, atheists, and non-believers. It is difficult to draw generalizations about people that hold these worldviews from the literature, as all who are not religious are frequently (and unfortunately) clumped into a single group or two, but more recently, a few typologies have been made to draw distinctions between groups of non-believers (Silver et al. 2014), based on differences in their philosophical stances (Schnell, 2015), and how they find meaning in life (Schnell & Keenan, 2011). For example, Schnell differentiates secular identities based on attitudes towards a deity (atheistic or agnostic) and philosophical orientation (scientism, personal responsibility, and humanism). Some non-believers invest heavily in science as a trusted source that leads to human progress, some emphasize personal responsibility for all decisions that are made since no influential deity is believed to exist, and secular humanists

centre their ideology around human welfare and living in an ethical manner.

There are approximately 500 million non-believers worldwide (Keysar & Navarro-Rivera 2013), but there is little research on the different secular worldviews that they hold and the differences between them, although preliminary results from the Understanding Unbelief Project have found that people that hold secular worldviews are diverse in cultures and beliefs, and many of them maintain supernatural beliefs regardless of their non-belief in a deity. They also appear similar to their religious worldview counterparts in terms of morality and values (Bullivant, Farias, Lanman, & Lee, 2019). It has been suggested that for these individuals, secular worldviews, such as the belief in progress or belief in science, may fulfil a similar psychological role to religious worldviews. These secular worldviews are sometimes referred to as ‘surrogates’ for religious belief. The term “religious surrogate” was first used by literary theorist Theodore Ziolkowski (2007, p.x) He said,

Faith is of course not limited to religion. To believe in something – a deity, a nation, a race, art, sex, money, sports teams – appears to be a fundamental human need.

They often function as surrogates when religious faith has been lost – surrogates to which individuals transfer the psychic energy formerly reserved for religion and in which they seek the same gratifications, and often the same forms and rituals, as previously afford by religion.

Even something like state welfare can function as a functional surrogate for religious belief when a person is primed with threats (Coleman III, Hood, & Streib, 2018). A number of potential surrogates for religious belief are embraced by people with a secular worldview, including belief in control (Greene & Murdock, 2013), free will (Crescioni, Baumeister, Ainsworth, Ent, & Lambert, 2016), belief in a just world (Donat, Peter, Dalbert, & Kamble, 2016), luck (André, 2009; Zhou, Tang, Sun, Huang, Rao, Liang, & Li, 2012), precognition (Greenaway, Louis, & Hornsey, 2013), and superstition (Fluke, Webster, & Saucier, 2014).

Recently, studies have investigated belief in science as a replacement for religious belief (Farias, Newheiser, Kahane, & de Toledo, 2013; Aghababaei, Sohrabi, Eskandari, Borjali, Farrokhi, & Chen, 2016). Belief in science is the term used to describe individuals who perceive science as a superior guide to reality, using it as a unique and central value. Belief in science has been shown to bolster moral sensitivity (Yilmaz & Bahçekapili, 2015) and increase happiness, hope (Aghababaei, 2016), well-being (Aghababaei et al., 2016), and it acts as a buffer against stress and existential anxiety (Farias, Newheiser, Kahane, & de Toledo, 2013). Much like religious beliefs can act as a buffer against death anxiety (Jackson, Jong, Bluemke, Poulter, Morgenroth, & Halberstadt, 2018), the same has been evidenced by belief in progress (Rutjens, van der Pligt, & van Harreveld, 2009). A belief in scientific-technological progress has been associated with higher life satisfaction (Stavrova, Ehlebracht, & Fetchenhauer, 2016). Belief in progress can provide a source of meaning, act as a buffer against mortality, and give individuals a sense of control (Rutjens, van Harreveld, & van der Pligt, 2010; Rutjens, van der Pligt, & van Harreveld, 2009). It alleviates the experience of low levels of control through a belief that, overall, humanity is progressing (Rutjens, van Harreveld, van der Pligt, van Elk, & Pyszczynski, 2016).

#### *2.5.1.4. Needs fulfilment overlap between secular and religious worldviews*

Although beliefs have been given special prominence in the study of the functional role of religion, there are other embodied dimensions to the sacred that address human needs. For example, a belief in God that is embodied in church attendance can function as a source of social support and social identity, similarly to a belief in Humanism that is embodied through an organized Humanist movement, which performs weddings, funerals, and naming ceremonies. These specific events assist in the fulfilment of psychological needs.

This, of course, does not mean that members of religious and secular worldviews attribute the same weight to specific beliefs or behaviours. For example, the non-religious are

more likely to attribute the outcome of an event to luck (Cragun & Sumarau, 2015). It is likely that belief in luck can help explain events that a religious believer might attribute to God or a divine plan. To illustrate this further, 27% of Americans believe that God plays a role in which team wins a sporting event (Merica, 2013), whereas non-believers are more likely to attribute the outcome to luck. The use of humour as a coping mechanism is another example of worldview differences. Religion provides coping mechanisms through religious belief and spirituality, but non-believers are more likely to use humour to cope with sources of stress, particularly when it comes to more vulgar forms of humour (Horning, Davis, Stirrat, & Cornwell, 2011; Saroglou & Anciaxus, 2004).

Sometimes a similar route towards needs fulfilment is used by members of both worldviews, but through different means. For example, in the instance of social participation and relatedness, the religious can fulfil this through close bonds and interactivity with their church congregation, whereas the non-religious might have tighter bonds with co-workers, online friends, or some other non-religiously affiliated group. Social participation for people of both worldviews lowers mortality rates (Shor and Roelfs, 2013), regardless of source. Social participation is especially crucial for identity development for members of secular worldviews, such as self-identified atheists. Atheists navigate their identity partially through political discourse, and partially through the use of new media techniques, such as the internet, to develop a group consciousness that helps define their identity (Smith, 2013; Smith & Cimino, 2012; Smith, 2011).

Those that follow a secular worldview can also have beliefs and experiences that are more commonly associated with religious worldviews. For instance, in China, non-believers report having supernatural beliefs and transcendent experiences. Transcendent experiences for these secular individuals are associated with higher moral principles and prosocial behaviour (Dong, Wu, Zhu, Jin, & Zhang, 2017). People with a secular worldview have

different sources for meaning in life than those affiliated with a religious worldview, but this does not necessarily come at an additional cost to existential meaning. One major difference, though, is that non-believers indicate that meaning in life is created by the self rather than a higher power (Speed, Coleman, & Langston, 2018). Let me give another example, regarding how the religious and non-religious alleviate fear of death in similar ways but through different means. Although most unbelievers don't consider the prospect of literal immortality, most do seek some form of symbolic immortality, even if unconsciously, through the completion of difficult/creative tasks that will cause them to be remembered, or through a feeling that they become one with nature after death, or by living on through the existence of their children (Sturesteps, 2013). If a person feels that they can live on through their children or their actions, then there is less need for the literal immortality that comes with a belief in religion. Thus, it has been found that a belief in symbolic immortality decreases death anxiety (Bennett & Huberman, 2015; Florian & Mikulincer, 1998; Rosenbaum et al., 2006) similarly to a belief in literal immortality (van Tongeren et al., 2017). Lastly, music can be used as a mechanism by people from both worldviews to help improve forward-driving needs, for it works as a motivator to accomplish a goal (Strachan, 2015).

One other factor which plays a role across the religious-secular divide is the degree of strength or certainty in a particular worldview. Literature suggests that those with higher belief certainty, whether that's certainty in religious belief or in their type of unbelief, report higher well-being (Galen & Kloet, 2011). Similarly, there is a curvilinear relationship between death anxiety and security in an individual's worldview, with moderately religious people experiencing more anxiety about death than firm nonbelievers or highly religious people (Fortuin, Schilderman, & Venbrux, 2018; Jong et al., 2018).

### 2.5.2. Affect and prosocial behaviour

There has been, until now, modest research on the relationship between the sacred and positive affect and prosocial behaviour intention, but there is some evidence of a positive relationship. There is, for example, some evidence that sacred attributions help generate positive emotions (Pargament & Mahoney, 2005a; Phillips III & Pargament, 2002). A word of caution, though: not all affective responses associated with the sacred are positive. The sacred can generate feelings of horror, dread, and isolation as is the case in pilgrimages to sacred sites of tragedy and death. People commemorate places of tragedy with reverence, introspection, and through the placement of physical objects, such as flowers. According to Osbaldiston and Petray (2011), visiting “dark tourism” places like war memorials can cause visitors to feel something deep and meaningful that impacts their identity.

Prosocial behaviour is defined as a broad category of acts that are socially perceived as generally beneficial to others (Penner, Dovidio, Piliavin, & Schroeder, 2005). It has been suggested that secular worldviews may lead to an increase in prosocial behaviour (Galen, 2017), similarly to religious ones (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005; Shariff, Willard, Andersen, & Norenzayan, 2016). There is also some research suggesting that religious music can prime religious people to act in a more moral way (Lang et al., 2016). In this instance, it is possible that the sacred quality found in religious music functions as a mechanism that aligns or orients people’s behaviours in a prosocial way. This possibility is reinforced by other studies showing that religion and religious words can lead to greater prosociality (Blogowska, Lambert, & Saroglou, 2013; Clobert, Saroglou, & Hwang, 2015; Pichon, Boccato, & Saroglou, 2007).

### 2.6. Sanctification theory

I will now outline the final part of the theoretical framework of this thesis. A recent influential empirical work on the sacred by Pargament and Mahoney outlines a sanctification



theory (2005). Sanctification is the process by which any aspect of a person's life gains sacred character and significance. Once an aspect is invested with that perceived quality, it is marked as sacred. The focus of sanctification theory is on the *perception* of what is sacred and to ground the study of the construct in social science rather than theology. Sanctification theory outlines five roles of the sacred in human functioning: 1) people invest considerable time and energy into the sacred, 2) they will go through great lengths to preserve and protect what is sacred to them, 3) the sacred generates spiritual emotions including transcendence, adoration, love, and awe, 4) the sacred is a powerful personal and social resource that is utilized throughout a person's life, and 5) the loss of the sacred can have devastating effects.

While most of the psychological literature focuses on the benefits of religious belief and practice, with the notable exclusion of studies on prejudice and religion, sanctification theory includes the prospect that the loss or violation of the sacred may have serious detrimental consequences. If that is the case, it would provide a strong test of the key question of this thesis — whether a secular worldview like that of metal culture would, for its members, perform a similar psychological role to that of religion; this means that it is necessary to test both the positive and detrimental ways in which the sacred can have an impact on individuals.

Sanctification theory outlines two types of the sacred: theistic and nontheistic. When an object is perceived as a manifestation of God, that is, when it is imbued with or by a deity, then it is categorized as the theistic sacred. For instance, many view the Holy Bible as being inspired by or written by God, so the words of the Bible and physical copies of the text are often seen as sacred by followers of the Christian faith, and since the Holy Bible is considered sacred, it is an offense to burn or desecrate it. The Bible is a theistic sacred object. It is the second form, the nontheistic sacred, that is more pertinent to this thesis. In nontheistic sanctification, objects are imbued with sacred character and significance, but

without those attributes stemming from a god or a specific religious tradition. Although ‘nontheistic sanctification’ approaches what is being investigated in this thesis, the term and its operationalization have been criticized for not being nontheistic enough (Deal & Magyar-Russel, 2018), so this thesis utilizes the less restrictive term secular sacred (Knott, 2013). In both forms of the sacred, what is perceived as sacred is dependent on culture and the individual. Just as religious individuals are socialized to sanctify specific objects, people of other cultures will have different types of objects that are perceived as being sacred (Pargament & Mahoney, 2005a).

The major criticism that could be made of sanctification theory is that it defines the sacred in terms of having a perceived divine quality, but a clear definition of the divine and divinity was not given. In addition, sanctification theory has received criticism for the way in which the nontheistic sacred is defined and applied, particularly for not encompassing spiritual expression within a nontheistic domain (Deal & Magyar-Russel 2018).

Within the psychology of religion, the problem of a lack of clear definitions for major constructs is not unique to divinity, as religion and spirituality also have a broad range of unclear definitions in the literature that are often not interchangeable (Charles, Bartlett, Messick, Coleman III, & Uzdavines, 2019; Kadar et al., 2015) and the terms become especially problematic when applying them to multiple cultures (Ladd & Messick, 2016). It is due to this lack of clarity when it comes to the ‘divine’ that this thesis does not define the sacred in terms of divinity, but rather, the construct is approached in the more Durkheimian sense of being the alternative to the mundane. Sanctification theory is used in this thesis in the strict sense that it is a useful framework to test for the psychological role of the sacred, particularly when this is violated or lost.

Pargament & Mahoney’s sanctification theory is the most widely used framework for studying psychological aspects of sacredness, so I used it to build the underlining theory for

this thesis. Previously, this theory has been applied to studying the sanctification of marriage (DeMaris, Mahoney, & Pargament, 2010), same sex relationships (Phillips III et al., 2017), sex (Leonhardt, Busby, & Willoughby, 2019; Murray-Swank, Pargament, & Mahoney, 2005), the human body (Mahoney et al., 2005), and work (Walker, Jones, Wuensch, Aziz, & Cope, 2008). Phillips III et al. (2017) used the nontheistic items of the scale to measure sacredness among atheists in their samples. In the same way, this thesis will only include the nontheistic items across its studies.

## 2.7. Sacred loss and violation

One of the key aspects of this thesis is exploring what happens when people lose what is sacred to them. Through their connection to the sacred, individuals experience a range of benefits including positive affective experiences and the fulfilment of psychological needs, such as finding meaning in life, performing mood maintenance, and connecting with others. Once a connection with the sacred is established, this connection is developed and maintained, often at great cost (Atran, Sheikh, & Gomez, 2014; Pargament & Mahoney, 2005b) — this has clear parallels with metal music culture, as some metal members persist with their cultural lifestyle even in regions where doing so might be punishable with death (Moretti, & Alvi, 2007; Yossman, 2016; Capper & Sifre, 2009; Darwish, 2018). The sacred can be heavily intertwined with a person's moral beliefs and core values (Atran & Axelrod, 2008), so it isn't surprising that when the sacred is lost or violated this can be devastating, and lead to anxiety, anger, and depression (Pargament, Magyar, Benore, & Mahoney, 2005). These devastating effects may arise because individuals have implicit assumptions about the sacred aspects of life, such that their bond with the sacred is everlasting and should be revered by those within and outside of that worldview. So when the sacred is ruptured, a vital connection to one's worldview is damaged (Mahoney, Rye, & Pargament, 2005). For example, sacred religious items can be perceived to lose their sacred value in different ways

(e.g., a rosary given by a Catholic priest might lose its sacred value if the priest was involved in a child sex scandal). The perceived dissipation of the sacred quality of an object is sometimes referred to as desacralization, but due to the broader ways in which that term is often applied, this thesis will only use more neutral and focused phrasing: sacred loss and the violation of the sacred.

Detrimental appraisals of the sacred may help explain prejudice, and even terrorism, as out-groups that don't share the same views on the sacred are frequently discriminated against by the in-group, and all the more so when there is perceived violation of the sacred (Abu-Raiya, Pargament, Mahoney, & Trewno, 2011; Alderdice, 2009; Atran, 2010; Francis, 2016). Arguments over places, objects, and values become existential struggles that can last for centuries when these are viewed as sacred (Atran & Ginges, 2012). Wars and terrorist actions often stem from what is perceived as a violation of the sacred or as an act to protect the sacred from future violations (Sosis, Phillips, & Alcorta, 2012). The violation of the sacred will be explored in this thesis, but at the individual level, not at the group level that is seen in radical religious groups and conflicting cultures. I investigate two forms of loss: sacred loss with desecration and sacred loss without desecration. Desecration is when sanctified parts of people's lives are violated, whereas sacred loss is the losing of a sanctified part of someone's life without any violation of that object (Pargament, Magyar, Benore, & Mahoney, 2005). This will be empirically explored in chapter seven.

## 2.8. Conclusions

This introduction has provided the theoretical framework for this thesis and reviewed some of the key literature on how the sacred is psychologically meaningful and can address various psychological needs including its ability to shape affect and prosocial behaviour. I have also explained how the literature on religious belief and the sacred can potentially be applied to secular worldviews — not just its positive but also its potential detrimental effects.

Thus far, the existing literature on the psychological role of secular worldviews is limited and dispersed. This thesis hopes to contribute to this emerging psychological literature by focusing on a particular worldview — metal culture — and assessing both the positive and negative effects of the secular sacred within this worldview.

## Chapter 3: The metal cultural worldview

### 3.1. Introduction

This chapter will review some of the scholarship surrounding metal music culture and explain why this is a suitable worldview for exploring the secular sacred. The primary argument is that metal music culture is a secular worldview that has much in common with religious cultures (rituals, symbolism, etc.). In addition to going into the details of this comparison, I'll provide an introduction to metal music culture and its scientific study, and provide insight into psychological needs that have been associated with the metal worldview and attributes that are prime candidates for sacredness.

Heavy metal music, and shortly thereafter, the metal music worldview, began in the late 1960s. Its focal point is the music, which is primarily characterized by loud volume, fast tempos, pounding percussion, and distorted guitars. Heavy metal members frequently share a common mode of dress, attitudes, symbols, and slang (Gross, 1990). Early metal music focused on the topic of power (Gross, 1990), but since then, metal has covered lyrical topics as diverse as can be found anywhere, and has evolved into multiple sub-cultures, each with their own distinctive style of metal music (Hein, 2003). As has been noted by Weinstein (2011), these subgenres of metal are composed of multiple musical styles and hybrid genres which don't resemble each other musically or within their social and cultural contexts, but they have a connection to what was called 'metal' prior to the development of the separate subgenres. The metal music worldview often presents an alternative and rebellious stance towards other parts of society that the general public might morally reject (Podoshen, Venkatesh, & Jin, 2014; Hjelm, Kahn-Harris, & LeVine, 2012). Different forms of metal have unique but stable forms of cultural expression, including philosophical themes, even after accounting for indigenous variations of metal music and culture. For example, black metal has been characterized as balancing a conflict between radical individualism and group

identity, being centred on a romantic view of nature that is intertwined with an idealized past, and as critiquing modern rationalism and secularism by celebrating the irrational and the primal (Olson, 2008). Said another way, many black metal musicians feel that they fight evil by embracing evil through lyrics, philosophy, and imagery, and through that, they find enlightenment (Thorgersen, & Wachenfeldt, 2017). Auditory qualities are different across subgenres as well—for example, death metal music is characterized by vocalizations with unnaturally low fundamental frequencies, high levels of distortion, and little to no harmonic structure. The vocal technique utilized in death metal is frequently described as ‘growling.’ These vocalizations are frequently associated with aggression and fear (Olsen, Thompson, & Giblin, 2018). On the other hand, gothic metal has been said to be a primarily feminine subgenre, and in some instances, it utilizes operatic female vocals and symphonic instrumentation (Guibert & Guibert, 2016). I will draw some comparisons between different types of metal, focusing on its particular characteristics and how fans of each respective type differ (Larsson, 2013).

### 3.2. The study of metal music & culture

A recent issue of Metal Hammer magazine includes an article with the title, “Metal isn’t a genre, it’s a way of life” (Alderslade, 2018). This is a perspective shared by most metal members, and one that is reflected in the recent focus of many scientists on studying metal culture in its own right. Metal culture is a worldview that is known for cultural resistance and sub-cultural conformity while encouraging members to develop individual identities, participating in collective practices, and commodifying within a context that is now global in complexity and character (Spracklen, Brown, & Kahn-Harris, 2011). The scholarly study of metal music and culture has seen rapid growth since the first international conference on the topic was held in 2008 in Austria (Hickam, 2014). Prior to then, there had been isolated studies of metal music and culture, but it wasn’t recognized as a unique field of

study.

Metal studies is the topic of numerous research conferences now, including a bi-annual conference hosted by The International Society for Metal Music Studies (ISMMS), and there is now a research journal dedicated to metal studies (Metal Music Studies), and academic books about the subject have been published by Routledge, Ashgate, Duke University Press, & Equinox. There are also a number of academic/college courses currently being taught on the topic of heavy metal. Metal studies grew out of grassroots efforts around the world that were able to become more globally organized using newly developing internet resources (Hickam, 2014), similar to how atheists became more organized using the same means (Smith, 2013; Smith & Cimino, 2012; Smith, 2011). Most of the works within metal studies are anthropological or sociological, so this thesis, while making a significant contribution to the scientific study of the sacred, will also lay some of the groundwork for exploring metal culture from a psychological perspective. It has been emphasized by some scholars that metal studies could contribute to a deeper understanding of sociocultural processes worldwide, but to do so, it needs to branch out methodologically (Hickam, 2015).

### 3.3. The global reach of a metal worldview

Metal members in particular are being investigated in this thesis because they are a growing, global population (Weinstein, 2011; Wallach, Berger, & Greene, 2011) that the scientific community is increasingly interested in understanding (Spracklen, Brown, and Kahn-Harris 2011; Hickam, 2014). It is difficult to determine how many metal members and musicians exist, but it's clear that it is a worldwide phenomenon, since bands from 149 countries are currently registered on metal archives (Encyclopedia Metallum, <https://www.metal-archives.com/>), which is the largest online database of bands and musicians. Until recently, a metal worldview and its academic study were seen as male-dominated, but more recently, those demographics have been changing as women have



become more involved in metal culture and its study (Riches, 2015; Hill, 2016). Metal culture is often passed down from parents to their children (Guibert & Guibert, 2016), although, overall, women are more likely to have been socialized into metal by their parents than men (Guibert, 2014). Metal members exist among all ages, social statuses, and occupations (Guibert & Guibert, 2016; Ury-Petes, 2016; Kahn-Harris, 2007), and the topic even comes up with prominent politicians, e.g. in 2017 Denmark's Prime Minister publicly gave the President of Indonesia a metal album as a gift. Another example was when President Obama made the joke in 2016 that the good governance in Finland might be due to this country having the highest per capita of heavy metal bands in the world (which is 53 heavy metal bands per 100,000 people according to Encyclopaedia Metallum's 2012 statistics). In looking at the members registered on some of the largest bands' social media accounts, a single band can have as many as 36 million followers, as is the case of Metallica. Another notable mention is Iron Maiden, who have 14 million on Facebook alone. Even an extreme metal band, such as the death metal band Cannibal Corpse, whose lyrical content focuses on murder and bodily mutilation, have two million followers online (and a combined two million records sold). Finding strict numbers and demographics for metal members is a difficult task, especially when dividing the culture into strict subgenres, but some have attempted by surveying attendees at a large metal festival (Guibert & Guibert, 2016) or by surveying fans of a specific musical act (Ury-Petes, 2016).

Each metal subculture is not held within the borders and cultural restrictions of a single country (Weinstein, 2011; Wallach & Levine, 2011), but bands and members can also be influenced by their non-metal cultural heritage (Hecker, 2016; Karjalainen, & Sipilä, 2016; Levine, 2009a; 2009b; Dairianathan, 2009; Weston, 2011). A metal culture is not always contained or identified by political borders (Guibert & Guibert, 2016; Ury-Petes, 2016), but it can incorporate influences from them. Weinstein (2011) described metal as

being transcultural, rather than cross-cultural, to emphasize that metal culture transcends pre-existing cultural and national boundaries, meaning that most metal fans share a similar worldview. The differences in the experience of members within each respective subgenre of metal have not been given much attention in the literature. Much like how non-believers are frequently lumped into the same category (Messick & Farias, 2019), the same is the case in most studies of metal members.

Metal members are individuals from all job sectors, education levels, age groups, and most corners of the globe (Ury-Petes, 2016), though there are differences on which type of metal is preferred, and the type of metal that a person associates most with (Guibert & Guibert, 2016). For the general population, metal is one of the most reviled forms of music (Guibert, Lambert, & Parent, 2009; Négrier, Djakouane, & Collin, 2012), but for metal music members, there is a level of commitment to their music unlike what is found in the general population, since metal individuals listen to music more frequently than their peers (Guibert, Lambert, & Parent, 2009). For them, music plays a key role in their worldview, as it serves as a societal moral statement against the status quo (Morris, 2014; Podoshen, Venkatesh, & Jin, 2014).

#### 3.4. The metal worldview: religious or secular?

Metal music culture has a unique worldview that has traits similar to both religious and secular worldviews, so although it is not a religious worldview, it functions in many ways like a religion. Music fans can develop a sense of spirituality through music, and they use language consistent with the experience of the sacred to describe that spirituality (Harmon & Dox, 2016; Coggins, 2016), even though most metal members report not being religious, particularly among fans of more extreme subgenres like black and death metal (Baka, 2015; Hill, 2013; Swami et al., 2013), which often use lyrics and symbols opposing or mocking organized religion. From a psychological perspective, one possible reason for this

clear antagonism towards organised religion, is metal's own investment in proposing an alternative or surrogate for a religious worldview, by proposing a particularly intense relationship with its music, as happened previously with straight-edge punk rock (Stewart, 2011). Some have suggested that for metal's most devoted followers, their dedication to this worldview functions like a religion, as there is a kind of devotion embedded in a set of ideas and behaviours, e.g. a way of understanding one's role in society, cultural identity, rituals, and a sense of community that they feel that they belong to (Moberg, 2012).

There are parallels between a religious mass and metal concerts, including the role of synchrony, and the feeling of experiencing a transcendental force during the live metal music, which metal members describe using a language consistent with that of religious experiences (Coggins, 2016). One sociological perspective suggests that the ideal metal concert bears a striking resemblance to celebrations, ceremonies, and festivals that are of a religious nature (Weinstein, 1991). Weinstein argued that metal concerts are a manifestation of the sacred. In Weinstein's words,

The ecstasy, representations of the community to itself, the strong solidarity felt within the audience, and the bonds of mutual appreciation expressed by band and audience resemble features of religious festivals. Using the terminology of Mircea Eliade, ideal metal concerts can be described as hierophanies in which something sacred is revealed. They are experienced as sacred, in contrast to the profane, everyday world. The sacred takes place in its own sacred time ("reversible, indefinitely repeatable") and place, where the *ens realissimum*, the greatest reality, is found. (p. 232)

For those with either a secular or religious worldview, participating in rituals increases in-group affiliation, even for children (Wen, Herrmann, & Legare, 2016), so it is likely that rituals such as metal concerts act to increase the cultural bonds of members. This is especially true for children that have grown up with metal, as children of metal parents have the highest

probability of regularly dressing in metal clothing as adults (Guibert & Guibert, 2016). Finally, there is also some evidence that metal helps their members find meaning in life (Ahmadi, 2013). I must reiterate at this point that the task of this thesis is not to show whether metal is a religion, but rather if, from a psychological perspective, a metal worldview includes sacred elements which perform similar functions to those found in religious contexts, by fulfilling psychological needs, improving affect, and helping members feel a connection to the divine, in addition to areas that this thesis does not explore, such as meaning-making and coping with mortality.

### 3.5. The psychological functions of the secular sacred

As noted in the second chapter, religious worldviews can help fulfil certain psychological needs, such as increasing positive affect and prosocial behaviour. This next section will explore how a metal worldview can similarly address these psychological needs.

#### 3.5.1. The fulfilment of psychological needs

The fulfilment of psychological needs has been associated with a number of worldviews, but this is enacted via different dimensions embodied in these worldviews. Music, in particular, has been found to regulate arousal and mood, help achieve self-awareness, and it is used as an expression of social relatedness (helping individuals to feel connected to others; Schäfer, Sedlmeier, Städtler, & Huron, 2013). Music has previously been associated with power and control (Dissanayake, 2006). Other functions associated with music are the development of self-identity, interpersonal relationships, mood (Hargreaves & North, 1999), and self-regulatory goals (van den Tol & Edwards, 2015).

There is emerging evidence that a metal worldview can lead to metal members being more psychologically well-adjusted than their peers, which is likely due to the strong social connections that occur when being involved in a fringe culture (Howe et al., 2015; Recours, Aussaguel, & Trujillo, 2009). These strong social bonds are probably fostered by the intense

positive emotions, including intimacy experienced in crowds (Hopkins et al., 2016), such as those of live metal music concerts. These concerts may create euphoric feelings and be emotionally therapeutic (Polzer, 2017), and there is evidence that even extreme metal music genres produce positive emotions for metal members, contrary to previous claims that extreme metal makes people angry (Sharman & Dingle, 2015). This might seem counter-intuitive, since extreme metal music appears on the surface aggressive and threatening, but there is some evidence suggesting that extreme metal members override the perception of extreme metal as a threat through cognitive control and effort (Ollivier, Goupil, Liuni, & Aucouturier, 2019). Music in general has been shown to help people cope with stress (Labbé, Schmidt, Babin, & Pharr, 2007), and metal music has been known to act as a buffer for death anxiety via reinforcing self-esteem and the metal worldview (Kneer & Rieger, 2016).

### 3.5.2. Affective reactions

Extreme metal often focuses on the dark aspects of life, which paradoxically may help metal members cope with these through their relatability. Instead of making thoughts like suicidal ideation taboo, genres like doom and suicidal-depressive black metal (SDBM) tackle them head-on, which means that they are talked about in the community. These extreme forms of music have been shown to improve affect among extreme metal members (Sun, Lu, Williams, & Thompson, 2019), helping them process anger and regulate emotions (Sharman & Dingle, 2015). Metal's subcultures also provide a support structure to help cope with hardships, including mental health problems and physical disabilities. For example, crowd-surfing wheelchairs are a regular occurrence, and many musicians with physical disabilities are still embraced in the community, such as the frontman of Possessed, Jeff Becerra, who continues to headline music festivals while singing from his wheelchair.

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

A metal member in a wheelchair crowd surfs during Megadeth's performance.  
Photo by James Keivom / NY Daily News / Getty Images

### 3.5.3. Prosociality

As noted in the previous chapter, secular mechanisms can lead to an increase in prosocial behaviour (Galen, 2017), just as religion can (Shariff, Willard, Andersen, & Norenzayan, 2016), and religious music can prime religious people to act in a more moral way (Lang et al., 2016). Prosociality was identified as a crucial socially driven-need in the previous chapter, thus it is an important variable for examining psychological functioning within this thesis. Prosocial measures generally focus on either intentionality or behaviour. Evidence has been found that prosocial intentions are heavily influenced by personal norms (particularly those dealing with moral obligations), awareness of adverse reactions to non-prosocial actions, the ascription of responsibility for not acting prosocially, and perceived control over a situation (Steg & de Groot, 2010). Measures of prosocial intentions and behaviour have been criticized for their validity, with rare cross-cultural replications, but nevertheless it is a topic of growing interest, particularly within the last two decades (Vilar, García, & Soto, 2019). In the context of psychological research, much of the literature stems from moral psychology, which also includes other approaches to moral intentionality,

including those outlined by Moral Foundations Theory, which identifies different moral reasoning styles that people utilize to make decisions. One of the questions of this thesis is whether the sanctification of music for members of a secular worldview like metal's can be associated with higher prosocial intentions even when the lyrical subject matter does not prime the person in that direction, as it is already widely established that prosocial lyrics influence prosocial behaviour (Greitemeyer, 2011; Jacob, Guéguen, & Boulbry, 2010; Ruth, 2017), and the prosocial behaviour can increase when music primes of a watching God (Batara, 2016). This lyrical effect is not unique to prosocial lyrics, as aggressive lyrics can lead to more aggression, romantic lyrics to higher levels of success following a courtship request (Guéguen, Jacob, & Lamy, 2010), and misogynistic behaviour is decreased with pro-equality lyrics (Greitemeyer, Hollingdale, & Traut-Mattausch, 2015).

Each of the three psychological dimensions mentioned previously (self-awareness, mood maintenance, & social relatedness) have been found to have a positive relationship with prosociality. Arousal has been associated with prosocial values, such as the arousal from seeing awe-inspiring aspects of nature (Joye & Bolderdijk, 2015). Self-awareness in the form of prosocial self-schemas has been associated with prosocial behaviour (Froming, Nasby & McManus, 1998). Further, music can generate positive affect, which has been associated with prosocial behaviour (George, 1991). General public self-awareness has also been found to be a moderator between the watching eyes phenomena (acting more prosocially when others are watching) and prosocial behaviour (Pfattheicher & Keller, 2015). Lastly, relatedness has been associated with increased prosocial behaviour (Pavey, Greitemeyer, & Sparks, 2011). This provides reason to predict that, since sacred religious music can prime prosocial behaviour and psychological needs fulfilment, that sacred secular music might have the same effect.

### 3.6. Sanctity and metal

This thesis aims to identify some of the psychological roles that a metal worldview can fulfil. As in a religious culture, there are many dimensions and potential mechanisms to be considered. Here I will focus on music, artefacts, rituals/dances, symbols, and pilgrimage, which are all particularly important in a metal worldview and good candidates for the secular sacred that might play a relevant psychological role for metal individuals.

#### 3.6.1. Metal music

There is no common definition for sacred music. In Roman Catholicism, it has been described as having the ability to help experience God more truly and vividly than otherwise, but in non-religious contexts, for music to be sacred it needs to inspire feelings of awe, or in some cases, fear (Goldman, 2009). Music is important across most religious cultures and rituals, such as in the Catholic Church where it is an integral part of the liturgy, but also with smaller indigenous groups, like the Native American Mescalero Apache tribe where it is used for puberty rituals (McLucas, 2017). The connection with sacred music can be further refined to shape the intensity of one's experience of the sacred, as is the case of the Buddhist spiritual practice Chöd, where music compliments written liturgy and adds to the meditative experience (Cupchik, 2015). Something similar can be found in the Sufi tradition (Lewisohn, 1997). For the most part, music can be perceived as sacred without necessarily having unique traits that differentiate it from non-sacred music, but that isn't always the case. For example, sacred music in Ethiopia has a different modal system than their secular music, and it has an emphasis on continuity over time, contrasting the innovation found in Ethiopian secular music. Another difference in the Ethiopian example, is that secular music can be played by males or females, but sacred music is predominately played by highly trained male musicians (Shelemay, 1982).

There is one overlap between religious music and metal music: Christian heavy metal.



Christian heavy metal aimed to bring the liturgy to new audiences. Even though the Christian music industry created deliberate structures to keep secular popular music like heavy metal out of their faith, that perspective eventually changed in an attempt to keep religion relevant for younger generations (Kahn-Harris & Moberg, 2012). During the 1980s and 1990s, Christian metal bands were formed as a response to the anti-religious message of most heavy metal bands. They used metal music to try bringing the message of Christian values to metal members (Chang & Lim, 2009; Luhr, 2005). Following that, Christian metal bands began to form playing extreme subgenres of metal music, such as death metal and black metal. Those subgenres are normally characterized by conscious extremes that could be called sonic transgressions, (Kahn-Harris, 2007), which include radical lyrical subject matter including strongly subversive religious themes, an exaggerated version of the metal aesthetic, and intense and physical modes of appreciation, such as moshing (Kahn-Harris & Moberg, 2012). Even though Christian metal avoids the antagonistic stance that metal music generally has towards religion, it incorporates some metal practices, including the dance of moshing. The main difference between Christian metal and other metal music is that the lyrical themes are Christian, and the musicians are practicing Christians (Moberg, 2015), although this hasn't always been the case, as some bands have falsely claimed to be Christian to acquire Christian fans ("Imprisoned singer claims fake faith," 2014). Similar to the merging of Christianity in a minority of metal bands, some heavy metal bands in the Middle East and North Africa have incorporated Islam into the aesthetic and the message of their bands (LeVine, 2008). It isn't clear to what extent the incorporation of religious themes makes those songs sacred, but it is possible, as this thesis will demonstrate, that metal without religious themes has effects that are consistent with the sacred.

Some metal members have described transcendent experiences while listening to secular metal music, and they have used religious language to describe their experiences

(Coggins, 2016). For example, one of Coggins' participants described the experience of live drone metal performance like this:

It's similar in a way to the reverence you feel when you're at a prayer meeting or at church at a certain point where... what you would describe as the Holy Spirit is being manifest in the room... I'm not really into religion for the dogmatism or the mind control, but at the same time I think the ritual aspect, the spirituality aspect is something that is appealing to me. (p.323)

Examples like what Coggins has found hint at the existence of secular sacred music within the metal worldview, but it can be difficult to ascertain, since the sacred and ordinary are so heavily intertwined in people's lives (Day & Rogaly, 2014).

### 3.6.2. Metal artefacts

Material manifestations of the community are important because metal members find a sense of belonging through symbols and gestures which are present on their clothes, objects (e.g., their record collection), through tattoos, and jewellery (Snell & Hodgetts, 2007). Many metal individuals continue to dress in metal cultural attire outside of metal contexts (Guibert & Guibert, 2016). The metal worldview has particular expressions of identity, such as the intimate creation and wearing of battle jackets. A battle jacket or battle vest is an article such as a leather jacket that is customized by the individual that wears it. It is a personal endeavour, decorated with studs, spikes, pins, and patches with the logos of bands or artwork that are important to the wearer. It can be a time-consuming process, as the patches that are sewn onto a jacket are often collected over decades, and some of those patches gained greater value based on the time period of their collection, the availability of the patch, and what the patch represents (an album, a band, etc.) (Cardwell, 2017).

### *3.6.2.1. Imbued with magical qualities*

A common characteristic of sacred artefacts is the perception that they have a spiritual or magical quality, which in religious contexts is frequently perceived as a manifestation of God. Manifestation of God scales have been used to explore the sanctification of the body (Homan & Boyatzis, 2009; Mahoney et al., 2005a; Mahoney et al., 1999), learning (Phillips & Kitchens, 2016), strivings (Mahoney et al., 2005b), parenting (Weyand, O’Laughlin, & Bennett; 2013), and marital sexuality (Hernandez, Mahoney, & Pargament, 2011). Although none of the manifestation of God scales focus on the sanctity of material objects, there is evidence – even for secular objects – that objects are perceived to be imbued with non-measurable qualities. People often engage in processes of magical thinking (i.e., contagion) by assuming that qualities can be transferred from one’s corporeal self to an object (Nemeroff & Rozin, 1994) or that magic or unseen forces can somehow change or destroy an object (Subbotsky, & Quinteros, 2002). To give one example, people are less likely to buy a shirt that they know has been touched by another person, even though it is commonplace to touch products while shopping (Argo, Dahl, & Morales, 2006). As another example, people often believe that food is imbued with the essence (and ‘love’) of who prepared it (Rozin & Nemeroff, 2002). Similarly, a record collection can be seen as an extension of the self, and one that shares the glory of the music between the owner of the collection and the artist that composed the music (Giles, Pietrzykowski, & Clark, 2007). This likely applies even more so to objects that metal members own that have been signed by, previously owned, or that have interacted with a musician that they idolize, as metal fans might feel that the item has been imbued with a magical quality when it was touched by the metal musician, since metal musicians are ascribed sacred qualities (Weinstein, 1991). If an object is perceived as sacred by a member of a secular worldview, it would likely include a perceived magical or spiritual

quality that connects them either to the metal worldview, or to the sacred metal musicians that they associated with the item.

### 3.6.3. Rituals and dances

Metal members have a shared history, identity, experiences of belonging, emotional attachment, and common symbols, such as the hand gesture known as the “horns.” (Silverstone, 1999). The metal worldview includes sacred spaces and rituals with a code of behaviour that should be conformed to, like in the dance known as moshing (Riches, 2011; 2012), which can reaffirm their shared identities (Snell & Hodgetts, 2007). Many rituals are collective cultural expressions that place the individual in a morally relevant, purpose-driven universe (Smith, 2017). Rituals in the metal community include all the staples required in a religious ritual: synchronic movement, intentionally clear actions, and both euphoric and dysphoric arousal (Whitehouse et al., 2014). The focal ritual in the metal worldview is the metal concert. A metal concert can vary in size between only a couple of dozen people to tens of thousands, but regardless of the size, the ritualistic aspects of it are similar, though the formality of these rituals is dependent on the subgenre of metal and the particular musical acts. Some similarities include a musical act held in a position of reverence by an audience, chanting during appropriate call-and-response moments of their performance, and showing positive feedback through using the symbol of ‘the horns.’ As an example of differentiation, many black metal bands perform anonymously in black robes, light candles and incense, and explicitly refer to their concerts as ‘rituals.’ These musicians frequently do not interact with members or the media in any way, and they make attempts to preserve their anonymity, which is done in order to preserve the integrity of their musical performances and vision (e.g., Deathspell Omega, Batushka), although in some cases, like for bands in areas where metal is illegal, performing anonymously is crucial for preserving the safety of the musician. In addition, specific forms of black metal have been investigated for their ‘dark rituals,’ as they

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

Batushka's concerts share much in common with Eastern Orthodox mass

often incorporate abjection; a terrifying, visceral reaction to stimuli. Some black metal bands utilize human bones, the heads of animals, such as a pig, and can use fake or real animal blood to anoint themselves and select members of the audience, as has been done by the band Watain (Podoshen, Andrzejewski, Wallin, & Venkatesh, 2018; Introvigne, 2018). For these select black metal bands, the ritual aspects are taken more seriously, and are aesthetically, odorously, and experientially different from most other metal concerts. Some ritual aspects of Watain's concerts are illustrated well by this quote from a journalist's review of their performance (Millard, 2014):

Torches were lit, giving the room a nice earthy smell... shit started to get weird around the time Watain frontman Erik Danielsson brought out this (I assume) Satanic talisman thingy, which from my vantage point looked kind of like a human skull with ram horns jammed into it, held it aloft, then waved it around like he was casting a spell onto the crowd. That's around the time people started leaving the mosh pit with blood on them. Shortly after that, it started to smell ungodly, like human flesh was actively putrefying

in the room. And that, believe it or not, was when people started throwing up ... It's probably not a coincidence that this is when people started getting really into the show.

There are a number of dances that take place during these rituals, but only at culturally appropriate times (i.e., it is not appropriate to dance when there is no music being performed). One of the most common and constant forms of dances during metal concerts is *headbanging*, which is the synchronous movement of the head with the tempo of the music. There are varieties and different degrees to which members can headbang, all of which are culturally appropriate. For instance, participants with long hair might choose to *windmill*, which is when a person quickly throws their hair in a clockwise or counter-clockwise motion in front of them, giving an illusion similar to a windmill. Other forms of metal dances include stage-diving, crowd-surfing, and moshing. In moshing, participants violently shove one another in a rhythmic fashion to the music being played, and it is a rule to immediately pick up any participant that falls to the floor so that they do not get hurt or trampled by others. This rule is socialized into metal members. In contrast to something like the bystander effect, one will see multiple, if not all, nearby participants in a mosh pit rush to pick up someone that was knocked down (Patterson, 2016; Vasan, 2016; Hill, 2016; Riches, 2013).

#### 3.6.4. Sacred symbolism in a secular context

Even from the earliest days of metal music, bands were using symbolisms that often became synonymous with the bands. For instance, AC/DC used runic lightning bolts, Motley Crue used an inverted pentagram, and Iron Maiden consistently used Egyptian and Biblical symbols (Gross, 1990). Specific subgenres took this further, since black metal music is notoriously affiliated with inverted crosses and inverted pentagrams. Bands like Amon Amarth and Bathory became synonymous with Norse mythology and symbolism. Many metal members wear these symbols as a way of identifying themselves, while maintaining that the symbol is not a philosophical or religious declaration of faith (Gross, 1990).

Sometimes these symbols, like other aspects of an individual's metal identity, are associated with embracing the cultural heritage of the member (Hecker, 2016; Karjalainen, & Sipilä, 2016; Levine, 2009a; 2009b; Dairianathan, 2009; Weston, 2011). Other times they're a symbol of rebellion against the status quo that empowers metal members or serve as a satirical response to what is seen as hypocrisy in mainstream culture (Levine, 2009; Morris, 2014; Podoshen, Venkatesh, & Jin, 2014). These symbols are aesthetically similar or identical to religious ones, and they are clearly important for the metal worldview, but the jury is still out on what they represent to each metal member, and to what extent these symbols are regarded as sacred.

### 3.6.5. Pilgrimage

One way that metal might become sanctified is through 'pilgrimages' to large-scale metal festivals. Pilgrimage has been associated with happiness and well-being (Pandya, 2015), spiritual growth, community, seeking closeness, and sensation seeking (Farias et al., 2018). There are some instances of secular pilgrimage in the literature, such as fans of an author traveling to the author's grave to pay tribute to their work. Another example that received widespread coverage was the increasing number of global visitors to the Australia Zoo after the death of Australian zookeeper and conservationist Steve Irwin (Gibson, 2007). A parallel among metal members can be found in the frequent visitors to Pantera guitarist Darrell Abbott's grave, who was shot and killed on stage while he was performing. These individuals were seen as heroes to those who went on the pilgrimage, and a desire for closeness was communicated through moments of silence and reverence. These behaviours have parallels with what is shown in religious pilgrimage, such as search for meaning, a desire to be near a sacred object, perceiving the site for the pilgrimage as magical, emotive, and awe-inspiring, and having a desire to be part of a community who share reverence and passion (Brown, 2016). Nowadays, many who are secular still go through with traditionally

religious pilgrimages, but for them, it is a personal ritual, not an explicitly religious one (Schnell & Pali, 2013). The multitude of reasons people go on pilgrimages can be conflicting, so any increases in pilgrimages cannot be simply attributed to a religious revival (Oviedo, de Courcier, & Farias, 2014). Some people go on secular pilgrimages for horizontal transcendence (social commitment, union with nature, self-knowledge, health, generativity), self-actualization, order (tradition, practicality, morality, reason), and for well-being and relatedness (Schnell & Pali, 2013).

In the context of metal, one of the most renowned journeys is to the metal music festival in Wacken, Germany. It is a bucket-list item for many metal members, because that festival is notorious for its immense size. Recent editions of the festival allow 84,500 visitors, tickets for which sell out within two days of going on presale. There was much demand for the festival to keep growing, but the hosts decided, for safety and logistical reasons, to cap the festival at that point. At large scale festivals like this, everything from food, to clothing, to entertainment involves the metal worldview and lifestyle, including events like metal-themed yoga. Large-scale pilgrimage events like this can increase the risk



Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

---

A metal yoga class is conducted with Bolt Thrower playing in the background  
Photograph by Jason Goodrich

of communicable diseases, crowding, noise, and harsh conditions, but these detriments do not deter people (Tewari et al., 2012), as they often experience intensely positive emotional experiences from the confirmation of a shared social identity and from connecting personally to other group members (Hopkins et al., 2016).

### 3.6.6. The idolization of cultural figures

Metal musicians are often held on a rather high pedestal, which is particularly true of well-substantiated bands. Similar to the case of rock music (Weinstein, 1995), this idolization of metal heroes has parallels with religious worship, including its terminology. For example, Metal Hammer Magazine, a popular magazine that covers popular rock and metal, has an award show that they call the Golden Gods, where musicians are given a Golden God award for being the best in different categories, such as best album or best live performance. This labelling of grand and respected metal musicians as deities shows an irony of the metal worldview, as it continues to disavow religion while embracing it. This hierarchy of

respected musicians above fans can often be seen physically at concerts too, as the performing band is usually on a stage that towers above the crowd, with the crowd often being kept away from the musicians with a barricade, and a band that performs well will often be praised with chanting, and the fans will call-back phrases as commanded by the frontman or frontwoman of a band, not unlike the call-and-response process that is prevalent in church services. Although it is clear that these musicians can be labelled as having sacred-like qualities, it is not yet certain if metal members *believe* that musicians have sacred qualities. To what extent there is a perceived magical or spiritual connection between metal members and their cultural idols has not yet been investigated.

### 3.6.7. The identity of a metal member

Metal members are a group of outsiders (in respect to the general population) that embrace a sense of identity based on their metal worldview. For some, their metal identity also reinforces their national cultural identity (Dairianathan, 2012; Weston, 2011). The documentary on metal by anthropologist Sam Dunn (*Metal: A Headbanger's Journey*) concludes that metal members are social outsiders (since the metal worldview is characterized by popular culture as deviant, anti-social, non-conformist, and counter-cultural; Sinclair, 2011; Snell & Hodgetts, 2007), and that they openly embrace that identity. The metal identity is prominent and self-supporting, with parallels to collectivist cultures, with the pursuit of the metal lifestyle being one of the highest priorities for the metal community. As an example, when the Iraqi band Acrassicauda had their practice space bombed and found themselves at risk of death for playing metal in a culture where it was not acceptable, the global metal community donated funds and petitioned until the band was able to move and continue pursuing their work safely in the United States (Sisario, 2009). Countless bands have lyrics with themes about fighting and dying for metal, and these are taken seriously by many, including the bands that sing those lyrics. In cases like Acrassicauda's, life and death

were literally at stake (Moretti, & Alvi, 2007). This example is not exclusive to this band, as authoritarian regimes often fear the rebellious message behind heavy metal, and in many areas of the Middle East, just dressing in metal cultural attire, with long hair and black clothing, is punishable by death (Yossman, 2016, Capper & Sifre, 2009, Darwish, 2018), but this does not eliminate the existence of metal bands in those countries. If anything, in those cases metal becomes a symbol of freedom, which is deeply intertwined with the identity of metal members in political climates that are perceived as corrupt or authoritarian. Parallels can perhaps be drawn between this way of thinking, and that of religious martyrs who died refusing to disavow their religion.

### 3.7. Methods for exploring the metal worldview

Thus far, research on the metal worldview has predominately been performed by sociologists and anthropologists, using simple surveys and ethnography, so this thesis is the first expansive psychological study of this worldview. While the other social science studies have used qualitative or correlational studies, my aim was to widen the methodology and draw upon the experimental psychology of religion literature paradigms.

### 3.8. Criticisms of metal studies literature

One of the largest difficulties of building on the inter-connected, interdisciplinary metal studies literature is the lack of scientific vigour that has been applied thus far, since the lack of psychological works and the shallow theoretical work behind existing studies isn't ideal to build off of. The field is still in need of replications and scrutiny. Metal members are already a difficult group to study, as many studies simply ask general university students for answers, but the metal worldview entails a more fringe population. Some studies have approached potential participants at metal music festivals, but in these studies, the use of alcohol and other illicit substances that are common at music festivals could confound the accuracy and representativeness of the data. It is also clear that there are distinct differences

between types of metal music members, but most studies exploring metal music combine all metal members into a single category, which doesn't sufficiently account for the individual differences that exist between, say, grindcore members and power metal members. Further, these studies often don't account for musical preferences, so they'll investigate the effects of metal using a general population, instead of a sample that clearly prefers metal music.

Controlling for preferences among metal members is crucial. To give an example, violent lyrics have been associated with hostile feelings (Anderson, Carnagey, & Eubanks, 2003), but in that study, lyrical preferences were not controlled for. People who *prefer* lyrics about violence, such as many death metal members, have a fundamentally different experience when listening to those lyrics than people who prefer other types of lyrics, and actually feel joy, peace, and wonder (Thompson, Geeves, & Olsen, 2018), rather than the hostile feelings found in the Anderson, Carnagey, and Eubanks study. With these current limitations of the literature in mind, the exploration of the metal worldview in this thesis will hopefully strengthen or weaken some of the findings from the sociological and anthropological literature on the effects of a metal worldview.

### 3.9 Conclusions

The case has been made that the scientific study of a metal worldview is a worthwhile endeavour, and that it is a suitable candidate for exploring the secular sacred, since it is functionally adjacent to religion, due to the symbols, rituals, dances, artefacts, and pilgrimages, all of which are key dimensions of the metal worldview. The following chapter will include the first study of this thesis, which aimed to characterize metal members and build towards the study of four types of the secular sacred: behaviours, artefacts, music, and persons.

## Chapter 4: Characterizing prerequisites for the secular sacred

### 4.1. Introduction

The sacred can take many forms, including behaviours, artefacts, and music, and how certain individuals are perceived. This study is intended to work as a bedrock framework to understand how these forms of the secular sacred emerge within the context of a metal worldview. This study has four goals: 1) to identify which behaviours are associated with higher levels of metal worldview commitment and identity, 2) to identify which types of metal artefacts are most frequently possessed and esteemed, 3) to explore if the experience of metal music is dependent on subgenre identity, and 4) to explore whether metal members use sacred-like language to describe their ‘idols.’ These four goals were pursued in order to characterize metal members and their sacred worldview and thus allow for the development of experimental studies focusing on the functions of the secular sacred.

#### 4.1.1. How worldview commitment and identity generate sacred behaviours

Behaviours can be assigned sacred significance (Tarakeshwar, Swank, Pargament, & Mahoney, 2001; Mahoney et al., 2005; Murray-Swank, Pargament, & Mahoney, 2005), and sacred behaviours tend to coincide with a stronger worldview commitment and identity. Although commitment and identity are often prerequisites to sacred behaviours, the relationship is also cyclical, since performing sacred behaviours also reinforces in-group identity and commitment (Atran & Ginges, 2012; Davis, Hook, Van Tongeren, & Worthington, 2012; Walker, Jones, Wuensch, Aziz, & Cope, 2008).



In general, metal members have an intense commitment to their worldview (Guibert & Guibert, 2016; Weinstein, 2000; Weinstein, 1991) that promotes shared experiences of belonging, emotional attachment, and the embracing of common symbols (Snell & Hodgetts, 2007). Commitment to metal is the extent to which an individual shows dedication to a metal worldview through their actions and beliefs. A metal identity reflects the extent to which a person views and identifies themselves as a practicing member of the metal worldview. The identity that metal members share is derived from a unique set of myths and heritage (Spracklen, Lucas, & Deeks, 2014; Kahn-Harris, 2007) which are socialized through other members and the internet. Even prior to the internet, intense commitment to the worldview was a prominent characteristic of metal members, as it was not uncommon for members to exchange cassette tapes and literature with members from other countries to promote the acquisition of worldview knowledge and artefacts (Dunn, 2004; Harris, 2000).

It is necessary to first establish what the most prominent cultural behaviours are for the metal worldview, and to do that, I needed to identify which metal members are the most committed and have the strongest metal identities, since higher levels of commitment and stronger identities should positively relate to engagement with metal behaviours.

There are different types of behaviours that could be identified as sacred within the metal worldview, such as behaviours focused around the obtaining of metal artefacts, and performing actions which monetarily support the worldview, like buying merchandise and music from metal bands. This has been called *sacred consumption* (Belk, Wallendorf, & Sherry, 1989). Sacred consumptive behaviours are among those that were investigated in this study.

#### 4.1.2. Metal artefacts as sacred

This study also sought to identify the most prominent metal artefacts, as these too are potential candidates for the sacred. Sacred objects can include historical relics, pieces that

promote worldview nostalgia, and objects that represent a bond between the user and their worldview, including iconic figures in their worldview. These objects often serve functional purposes, such as promoting social cohesion, as people that acquire quintessential sacred artefacts and souvenirs associated with the metal worldview feel a sense of community and belonging in admiring another's objects (Belk, Wallendorf, & Sherry, 1989; Snell & Hodgetts, 2007). It has been argued that a metal album collection can be seen as an extension of the metal member that owns it, as it represents a bond between oneself and the metal worldview (Giles, Pietrzykowski, & Clark, 2007). The literature has characterized metal artefacts using language consistent with sacred artefacts, but that has never been the focus of previous research. In order to investigate the relationship that metal members have with sacred artefacts in future studies, I had to first identify which cultural artefacts are the most important and most often possessed, as these are the objects that are likely to be regarded as sacred.

#### 4.1.3. Musical experience as dependent on subgenre identity

There is a long history in the world religions about identifying select musical pieces as sacred. As noted earlier, each subgenre of metal has subtle differences (Larsson, 2013). The experience of music is eminently individual, so it is likely that in a worldview as diverse as metal, where subcultures exist with different musical and aesthetic preferences, what music is perceived as sacred would be similarly diverse. The thematic content of different subgenres of metal is diverse: e.g. doom metal is composed of longer songs with downtrodden lyrical themes, whereas death metal is fast, abrasive, and frequently has violent lyrics. Similarly, the musical attributes of different subgenres of metal are different, including the tuning, song lengths, instruments used, tempos, and melodic structure. Some subgenres of metal utilize more operatic styles of singing, whereas others use harsh guttural vocals.

In this first study, I tried to include some of the best well-known metal types and thus

compare the emotional experience of listening to black metal, death metal, doom metal, heavy metal, power metal, and thrash metal. Black metal is an abrasive style of metal music that is characterized by tremolo picked guitar, fast drumming, and a high-pitched screaming style of vocal. Black metal is well known for their musicians' application of black and white makeup, most commonly referred to as corpsepaint (Kahn-Harris, 2007; Phillipov, 2011; Venkatesh, Podoshen, Urbaniak, & Wallin, 2015). The most common lyrical themes are Satanism, Norse mythology, nature, and cold winters. Death metal began as an offshoot from thrash metal, utilizing guitars tuned lower, and a more guttural vocal approach. Death and violence are frequent themes in death metal music. Doom metal is a subgenre that stemmed largely from Black Sabbath. Doom metal is characterized by long songs that are played at slow tempos, with an emphasis on emotion and trance instead of technicality. Heavy metal is the entry point for most metal members into metal music, so it is one that is more general and accessible to most metal members. Power metal is a more theatrical subgenre of metal that is heavily influenced by opera and theatre. It emphasizes musical and vocal virtuosity and often aims to create a larger-than-life or epic atmosphere, with lyrical themes about fantasy, war, and brotherhood. Thrash metal is a more aggressive form of heavy metal, with faster tempos and vocals that are typically yelled instead of sung. Metal members were asked about their listening experiences of these five metal subgenres to see how their experience of the subgenres was dependent on their subgenre-specific metal identity.

#### 4.1.4. Using language in a sacred-like way to describe metal musicians

For this study, I also wanted to explore the idolization of metal musicians. Metal members often use sacred-like language to describe metal musicians. Weinstein (1991, 88) likened the perception of metal musicians to shamans, stating that metal musicians are charismatic figures with extraordinary gifts that connect them to the divine. These 'metal gods' constantly prove their positions of authority through concerts and through their



recorded output. Weinstein claimed that the pinnacle of a musician's success is to make the audience experience transcendence, and it is through that gift of transcendence that metal members reciprocate by seeing the musicians as extraordinary. Metal musicians have been likened to gods in popular media, such as in the comedic films "Airheads" and "Tenacious D in the Pick of Destiny," but the treatment of prominent metal figures goes beyond these parodic instances. For example, effigies have been constructed of metal icons, and in unexpected places. At the zoo in Demidiv, Ukraine, a sculpture was erected of American thrash metal band Slayer's Tom Araya, which is adorned with the Slayer logo behind him, and has lyrics from one of Slayer's songs carved into a pillar. On the backside of the structure, there is a cross, and different forms of writing carved into the stone, including Norse runes.

Some materials have been removed from this thesis due to Third Party Copyright. Pages where material has been removed are clearly marked in the electronic version. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

---

An effigy of Tom Araya  
Photo by Metal Chris / Noizr

Metal musicians and members have been treated with reverence in the settings of a museum too, as the Birmingham Museum and Art Gallery just premiered the first of a series of galleries on the history of heavy metal, with the first documenting the fifty-year history of

Black Sabbath, going as far as to recreate the bedroom of one particularly devoted fan for the exhibit (“Black Sabbath super fan's living room rebuilt in museum,” 2019).

Individuals such as Black Sabbath’s Tony Iommi are frequently referred to as “a metal god” in contexts that are not easily perceived as a parody. Qualitative studies have found similar references to the band Iron Maiden as “the gods” instead of as Iron Maiden (Hill, 2011). This study sought to assess if metal members use sacred-like language to describe their favourite musicians. If using sacred-like language is a stable characteristic in metal members, then it is likely that members with higher levels of commitment to their worldview, stronger identities, and those that perform the most metal behaviours are the people most frequently using sacred-like language to describe metal musicians. If it is the case that members of the metal worldview are treating prominent metal musicians as sacred-like or as having characteristics that are beyond human capacity through their use of language, then it also adds credence to the notion of metal functionally working like a religion, except with metal musicians as surrogates for gods, saints, and holy people.

#### 4.1.5. Characterizing the personality of metal members

It has been previously claimed that individuals with higher levels of openness to experience generally prefer either complex and reflective music (e.g., classical music) or intense and rebellious music like rock and metal while they dislike upbeat and conventional forms of music like pop (Langmeyer, Guglhör-Rudan, & Tarnai, 2012). In addition, people with a preference for heavy metal music generally have higher levels of sensation-seeking intention and behaviour (Rentfrow & Gosling, 2003). Although musicians that differ in the style of music they play, whether that be classical or heavy metal, don’t tend to have personality differences from one another, they do have personality differences from the general population, including higher levels of extraversion and openness to experience (Rentfrow & Gosling, 2003). In the case of heavy metal music, these musicians consume

alcohol more frequently than the general population (Butkovic & Dopudj, 2017). However, there is conflicting data on personality differences in regards to members of the metal community compared to fans of other types of music; for instance, one study found an inverse relationship between a preference for metal music and extraversion, and agreeableness (Ferwerda, Tkalcic, & Schedl, 2017), where others have found a positive relationship with openness to experience (Vella & Mills, 2017). Personality is a key way of characterizing different types of people, so this study will explore whether or not personality differences in metal members are dependent on subgenre-specific musical preferences.

## 4.2. Method

For this first study I used an online survey distributed through metal-themed groups on social networking sites. The goal of the study was to develop a characterization of metal members for the purpose of studying the secular sacred through: prominent metal behaviours, metal identity, and commitment to their worldview, identifying prominent cultural artefacts, determining if the experience of metal music is subgenre-identity dependent, and determining if metal members use sacred-like language to describe their favourite metal musicians.

### 4.2.1. Participant recruitment

A total of 1,237 people participated in this study, though only 341 participants completed the surveys and were included in the analyses. The large attrition rate was mostly due to the long length of the survey, which took 43 minutes, on average, to complete. There weren't any restrictions for participation, although the recruitment specifically targeted metal members. The invitation to participate in the study was posted in metal chat groups on social networking websites. The discussion groups were largely focused on exchanging metal music, experiences, comparing bands, attending metal music festivals, or exchanging metal-themed memes.

Of the 341 participants, 261 (76.5%) identified as male, 73 (21.4%) as female, 4

(1.2%) as transgender, and 3 (.9%) as other. The sample represented a wide spectrum of ages (mean age = 31, SD = 9.5, Age range: 16-60) from 46 different countries. Participants were primarily white (N = 286, 83.9%), but other ethnic groups were also present (Black/African descent, N = 5, 1.5%; Asian descent, N = 7, 2.1%; Latino, N = 12, 3.5%; Arab, N = 2, 0.6%; Other, N = 29, 8.5%). Many of the people in the “other” category identified as biracial, mixed, or chose not be categorized. Most participants were born in the United States (46.3%), followed by the United Kingdom (11.7%) and Canada (7.9%). Countries represented were diverse, including Australia, Iran, India, Korea, Mexico, Norway, Turkey, South Africa, Zambia, and others. The broad spectrum of regions in the sample indicates the global extent of metal worldview, which is consistent with prior claims that a metal community can extend beyond borders (Weinstein, 2011; Wallach & Levine, 2011).

Most participants were single, never married (58.1%; married or living as, 37%; widowed, .6%; separated or divorced, 4.4%). When asked for religious affiliation, most participants declared “none” or that they were atheists (see Table 1). Many that fell into the “other” category called themselves a hybrid of affiliations, such as agnostic atheist, agnostic pagan, atheistic Satanist, and Pagan/Deist/Satanist. Further questions explored the religious and spiritual backgrounds of participants.

Half of metal members claimed to have experienced an evolution of their beliefs over time, as 48.4% of (N=165) participants reported that at some point their religion or belief had drastically changed. More specifically, 39% (N=133) had never believed in God, and 41.1% (N=140) used to believe in God, but do not anymore. The remaining 20% (N=68) believe in God, whether they were raised that way (14.7%) or converted and now believe (5.3%). This is consistent with public perceptions of metal members as being overwhelmingly non-religious; however, it is interesting that a significant percentage of them are deconverts from religion.

Religious Affiliation	Number	Percentage
None	107	31.4
Atheist	98	28.7
Agnostic	42	12.3
Buddhist	1	.3
Christian	37	.9
Islamic	2	.6
Judaism	3	.9
Satanic	9	2.6
Pagan	18	5.3
Other	24	7

Table 1: Religious affiliation among a sample of 341 metal participants.

Even though the overwhelming majority of the sample is not religious, 71.6 percent of the sample (N=244) reported that they had prayed at some point in their life, but 72.4 percent (N=247) of the total sample report never praying currently. The educational level of the participants varied greatly. See Table 2 for a complete breakdown.

Education Completed	Number	Percentage
Some high school or less	8	2.3
High school graduate	60	17.6
Attended some college	89	26.1
Associates degree	16	4.7
Bachelor's degree	92	27
Masters	51	15
PhD	12	3.5
Other post-college degree	13	3.8

Table 2: level among a sample of 341 metal participants.

An important focus of this study is on the different sub-genre preferences. The breakdown can be found on table 3. These subgenre members were specifically advertised (e.g., death metal members were sought in social networking groups about death metal) in order to obtain a diverse set of metal members. The “other” category includes subgenres that were not used in subgenre specific analyses, including crust, deathcore, gothic metal, symphonic metal, metalcore, nu metal, and some more specific sub-subgenres, such as technical death metal. Six participants within the other category said that they either enjoyed two or more genres equally, or did not like being categorized as a specific type of member.

Type of Member	N	Percent
Black metal	83	24.3
Death metal	78	22.9
Doom metal / sludge	41	12
Grind / power violence	14	4.1
Heavy metal	28	8.2
Power metal	22	6.5
Thrash	23	6.7
Folk metal	13	3.8
Progressive metal	12	3.5
Other	27	7.9
Total	341	100

Table 3: Types of Metal Members represented in the study

Economic status of the sample was diverse, as seen in table 4. Metal and its subgenres do not seem bound to a single economic class or education level.

	N	Percent
Below \$16,000 (£11,965 or €13,481)	122	35.8
Between \$16,000 and \$30,000 (£11,965 and £22,435 or €13,481 and €25,278)	80	23.5
Between \$31,000 and \$75,000 (£23,183 and £56,088 or €26,120 and €63,195)	107	31.4
Between \$76,000 and \$100,000 (£56,835 and £74,784 or €64,037 and €84,260)	20	5.9
More than \$100,000 (£74,784 and €84,260)	12	3.5

Table 4: Income level among a sample of 341 metal participants.

#### 4.2.2. Overview of study procedures

The online questionnaire was distributed via social networking sites, through specifically targeted groups that had a focus on metal. Some of these groups required me to answer metal worldview historical questions in order to gain entry to the group and post in it (e.g., Which band referred to themselves as “hydro-grind?” Answer: Cephalic Carnage) or to agree to certain terms (e.g., You will agree not to post about Cannibal Corpse or other bands that everyone already knows about). Many of these groups had an extensive list of rules prior to posting, so I could not post a link to the online questionnaire unless it was permitted by such rules.

When participants clicked on the survey link, they read a study information page and

then a consent form. Participation in the study was voluntary, and participants were allowed to quit the study at any time. None of the participants received compensation for their participation, and there weren't any anticipated risks or benefits, although 46.6% (N = 149) of participants said that they enjoyed or really enjoyed taking the survey.

#### 4.2.3. Overview of study measures

This was an exploratory study where I combined previously validated scales with new ones. The survey included general demographic items, a personality measure, measures of religion and spirituality, scales for metal behaviour, metal identity, and metal commitment. It also included a list of common metal artefacts. The third area of inquiry, on the relationship between subgenre-specific identity and the experience of metal music, was assessed by using measures of affect. Concerning the use of sacred-like language to describe metal musicians, I used of a scale that measures the usage of sacred-like language to describe participants' favourite musicians and their music.

##### 4.2.3.1. Personality measures

Distinctions have been drawn between cultural and musical characteristics of metal members of different metal subgenres, so this study sought to explore if those differences extend to personality traits. The Big Five Inventory (BFI) was used for its wide application across many cultural contexts (John & Srivastava, 1999). The BFI is a 44-item inventory that measures five factors of personality: extraversion, agreeableness, conscientiousness, neuroticism, openness. Each of the subscales had satisfactory internal reliability (agreeableness  $\alpha = .76$ , conscientiousness  $\alpha = .76$ , extraversion  $\alpha = .82$ , neuroticism  $\alpha = .84$ , openness  $\alpha = .72$ ).

#### 4.2.3.2. *Metal identity*

A metal identity scale was adapted from the 10-item Geek Identity Scale, which changed words pertaining to geek culture so that they would be consistent with a metal worldview (GIS; McCain, Gentile, & Campbell, 2015; e.g., I consider myself to be a part of metal culture). This scale had a moderate internal reliability ( $\alpha = .71$ ).

#### 4.2.3.3. *Metal commitment*

Due to the parallels between the metal worldview and religious worldviews, commitment scales were selected and adapted that were traditionally used within religious contexts. Two commitment scales were adapted from religious contexts, with language being changed to reflect a metal worldview. The first adaptation was the Salience in Religious Commitment Scale (Roof & Perkins, 1975; e.g., Metal is important for my life, but no more important than certain other aspects of my life.) and an adapted Religious Commitment Scale for metal (Pfeifer & Waelty, 1995; e.g., Do you think that your parents have passed metal down to you?) to control for level of commitment to the metal worldview. The Commitment Scale was adapted from the original 51-item scale used by Pfeifer & Waelty, of which, only 15 of the items were used strictly to measure metal commitment. The dimensions of the metal commitment items were investigated using a Varimax factor analysis. Three factors emerged following the analysis of a scree plot: positive commitment, negative commitment, and familial commitment. Items that did not meet the component cut-off value of .40 were excluded. The weakest item from the familial commitment factor was deleted as it reduced the Cronbach's alpha level by .13 if kept.

The first factor, positive commitment (14 items,  $\alpha = .76$ ), concerns positive outcomes and benefits that come from a committed connection with the metal worldview, such as finding meaning, comfort, happiness, sexual confidence, belonging, and a sense of divinity. Incorporated in this factor is a belief that the metal lifestyle should be defended, and that



metal is a part of all aspects of a committed metal member's life.

The second factor, (6 items,  $\alpha = .58$ ) comprises viewing metal as a corrupt force that causes people to be burdened, sickened, do bad things, generate dark thoughts, and commit sexual crimes if they listen to metal music regularly. Due to the low reliability of this scale, this second factor was discarded.

The third factor, familial commitment (3 items,  $\alpha = .85$ ) concerns being raised with metal commitment (i.e. passed on through parents).

#### *4.2.3.4. Cultural behaviours*

The list of behaviours was compiled from my years of engagement and ethnographic observation of metal members and their worldview. See appendix 2 for the full list of items. The scale consisted of 96 items where participants had to rate the frequency with which they engaged in the behaviours using a 5-point Likert scale (1 = never, 5 = always). A factor analysis using Varimax rotation followed by an examination of a scree plot determined that the scale should be four factors. The cut-off used for factor loadings was .30, so eight items were dropped that did not meet that cut-off. The lower cut-off used for this factor structure was based on that the lower-loading items were still thematically consistent with the rest of the factor. The dropped items were mostly about general behaviours that are not exclusive to metal members (e.g., I play an instrument; I watch horror movies).

The first factor (28 items, Cronbach's Alpha = .91) included items that dealt with personal, motivational, and experiential interactions with metal, such as the nodding of the head in a rhythmic fashion when metal music is heard, using metal music to help study or accomplish a goal, and different ways in which people engage metal music in their personal lives and in a live setting. These are behaviours that embrace metal music in a variety of ways, including through physiological and emotional responses, discussing it on social networking sites, using metal music for motivation to achieve forward-driving needs, and

using metal music as a coping mechanism.

The second factor (21 items,  $\alpha = .92$ ) described how metal members actively embrace metal-related consumerism and collect metal-related materials, including ones that are purely nostalgic with value only to the user, such as keeping old concert ticket stubs. These items deal with monetary expenditure, whether on albums and shirts, or on concert attendance, and are consistent with sacred consumption behaviours. These behaviours are about the material acquisition and collection of metal-related items, sometimes to a detriment (e.g., debt as a consequence of excessive spending).

The third factor (25 items,  $\alpha = .89$ ) concerns the different ways in which metal members develop an intentional aesthetics that is consistent with metal worldview norms, and how they display that aesthetic on themselves to both in-group and out-group members. These items are about the modification of the body, the attire, and a person's living space to have a more *metal* appearance. Part of these aesthetical behaviours includes judgments of others for not conforming to the metal aesthetic, and being critical of non-metal music. These items reflect an almost competitive attitude towards others, including other metal members. They embrace the metal cultural worldview, even through things such as the sharing of metal internet memes. It also includes avoiding, judging, or ridiculing non-metal music and people. These behaviours reflect the metal aesthetics being central to this individual's identity, so it causes discomfort for these individuals when their behaviour is not consistent with embracing the metal aesthetics.

The final factor focused on metal communal support activities and socially-driven needs (20 items,  $\alpha = .90$ ). These are behaviours that connect the metal member to the live metal concert scene, whether that means attending a show in another country, attending metal-themed restaurants or bars, helping bands play their town, or supporting their local music scene.

#### 4.2.3.5. *Metal artefacts*

In order to determine which artefacts are most commonly possessed by metal members, a list was generated consisting of the types of items that could be metal-themed or metal-related. This included clothing, physical album formats, items that can be acquired at a metal concert, and items that require interacting with musicians, such as an obtained item that has been autographed. The full list of items can be found in appendix 1.

#### 4.2.3.6. *Affect measures*

Participants answered scales that measure evoked emotions in response to music (Zenter, Grandjean, & Scherer, 2008) so that they reported the frequencies of experiencing each emotion when listening to five different subgenres of metal (black metal, death metal, doom metal, grindcore, and heavy metal). This measure included sub-scales for wonder, transcendence, tenderness, nostalgia, peacefulness, power, joyful activation, tension and sadness. These sub-scales can also be grouped into three over-arching factors: sublimity, vitality, and unease. Reliability analyses were run across each of the five subgenres for the emotion scales. The 5-item wonder scale held strong internal reliability across the five subgenres ( $\alpha = .88$ ), as did the 4-item transcendence scale ( $\alpha = .85$ ), the 5-item tenderness scale ( $\alpha = .90$ ), the 4-item nostalgia scale ( $\alpha = .82$ ), the 5-item peacefulness scale ( $\alpha = .91$ ), the 5-item power scale ( $\alpha = .89$ ), the 5-item joyful activation scale ( $\alpha = .87$ ), the 5-item tension scale ( $\alpha = .84$ ), and the 2-item sadness scale ( $\alpha = .81$ ). Two out of the three larger factors showed strong internal reliability. Sublimity, which combines wonder, transcendence, tenderness, and nostalgia ( $\alpha = .93$ ), and vitality, which combines power and joyful activation ( $\alpha = .89$ ), showed strong internal reliability, where unease, which combines tension and sadness, ( $\alpha = .59$ ) was much more inconsistent across the five subgenres of members. Due to the low Cronbach's Alpha level of the third major emotional factor, unease, the analyses presented here focus on the nine emotional categories rather than the three emotional factors.

It could be that the distinct role of sadness and tension in metal, which are emphasized in some of the genres of metal included, caused some inconsistencies in the factor that might not have been present in traditional uses of the scale.

#### *4.2.3.7. Religious language to idolize musicians*

To explore how participants described their favourite musicians and their respective music in sacred-like terms, a scale was created. A fourteen-item scale was developed to measure to what extent that people use language that surpasses the mundane when describing their favourite musicians and how they experience that music. Participants were asked to think of some of their favourite musicians then state to what extent they agreed with each of the scale items using a five-point Likert scale. The scale described musicians at a level beyond the ordinary. Example items include “Being like this person is not an obtainable goal” and “I have found something deeper than music in this person’s compositions and performance.” See appendix 7 for full list of items. The reliability of the scale was strong with a Cronbach’s Alpha of .84, but an exploratory factor analysis using the Varimax Rotation technique determined that two distinct subscales existed. The two subscales were decided upon based on an analysis of the corresponding scree plot. A cut-off of .40 and above was used for the items in each factor. This left one subscale with items pertaining to how people describe their favourite musician (7 items,  $\alpha = .80$ ), and one subscale for how participants connect to their favourite musician’s music (6 items,  $\alpha = .81$ ). The connection to their favourite musician subscale included items such as “This person is a god,” “I think of this person as more than a musician,” and “This person is immortal because their music will never die.” The connection to the musician subscale has items that described functional and transcendent characteristics of the music, including “This person is a source of inspiration for me,” “This person’s music brings me a sense of peace,” “This person’s music brings me hope and optimism about my own life,” “I have found something deeper than music in this

person's compositions and performance," and "This person's music got me through some hard times in my life."

### 4.3. Results

#### 4.3.1. Characterizing metal members through personality and subgenre identity

An exploratory analysis was performed to determine if there were differences in the personality traits of members that identify with different subgenres of metal. A multivariate ANOVA supported that different types of metal members differ significantly in their personalities, Wilks' Lambda = .803,  $F(45,1465.853) = 1.64$ ,  $p = .005$ ,  $\eta^2 = .043$ , Power = .998. More specifically, they differ significantly in regards to extraversion,  $F(9,331) = 3.93$ ,  $p < .001$ ,  $\eta^2 = .097$ , Power = .995, and conscientiousness,  $F(9,331) = 2.17$ ,  $p = .02$ ,  $\eta^2 = .056$ , Power = .885. These differences were explored further using Bonferroni multiple comparisons, which supported that black metal fans ( $M = 2.32$ ,  $SD = .67$ ) are significantly less extraverted than power metal ( $M = 2.99$ ,  $SD = 1.01$ ,  $p = .019$ ), thrash ( $M = 3.02$ ,  $SD = .97$ ,  $p = .009$ ), and heavy metal members ( $M = 2.98$ ,  $SD = .78$ ,  $p = .006$ ). No further differences were detected. It could be that the musical subgenre of black metal appeals more to introverted people than many other subgenres of metal. These differences are outlined in the table below.

	Black	Death	Doom	Folk	Grind	Heavy	Power	Prog	Thrash	Other
Black	1	.30	.37	.05	.65	.66*	0.70*	.50	.70*	.20
Death		1	.07	.35	.34	.36	.37	.19	.39	.10
Doom			1	.42	.27	.29	.30	.12	.32	.17
Folk				1	.69	.71	.72	.55	.74	.25
Grind					1	.02	.02	.15	.05	.45
Heavy						1	.01	.16	.03	.46
Power							1	.17	.03	.47
Prog								1	.20	.30
Thrash									1	.49
Other										1

Table 5. Bonferroni multiple comparisons. Mean differences shown between extraversion scores based on type of metal member. \*The mean difference is significant at the .05 level

#### 4.3.2. Behaviour, commitment, and identity results

A Pearson correlation was run to determine if a stronger metal identity and higher levels of commitment to the metal worldview would positively correlate to each type of metal behaviour. All forms of metal behaviours had a significant positive relationship with other forms of metal behaviours, metal identity, salience in metal commitment, and positive metal commitment. See Table 6.

	Metal Behaviours				Commitment		Salience in Metal Commitment	Metal Identity
	Personal	Materialism	Aesthetic	Com. Support	Positive	Familial		
Personal								
Materialism	.57**							
Aesthetic	.57**	.56**						
Com. Support	.58**	.60**	.61**					
Positive Cm.	.54**	.29**	.45**	.25**				
Familial Cm.	.07	.09	.17**	.10	.06			
Salience in Metal Commitment	.15**	.25**	.25**	.13*	.22**	-.01		
Metal Identity	.42**	.25**	.26**	.24**	.24**	-.09	.09	

Table 6: Correlations between four types of metal behaviours, two types of metal commitment, salience in metal commitment, and metal identity

\*\* significant at the .01 level \* significant at the .05 level

#### 4.3.3. Metal Cultural Artefacts Results

In order to later explore which metal cultural artefacts are likely to be perceived as having sacred qualities, it was important to first understand which artefacts were most common among metal members. The percentage of the sample that owns each type of item can be found in Table 7. For the overwhelming majority of metal members, their metal loyalty is reflected in their possession of metal artefacts.

Almost all of the sample owned metal shirts/hoodies and metal music in the form of compact discs. About half of the sample owned vinyl and/or cassette pressings of an album.

Type of item	Percentage of sample that owns
A band shirt or hoodie	95.3
Compact disc (CD)	92.4
Saved ticket stubs/wristbands	78.9
An album imported from another country	68.0
An item that is signed by a metal musician	63.9
A metal clothing item imported from abroad	63.3
Metal poster / poster flag	61.6
DVDs, VHS, etc. of metal music performances	60.1
A photograph of yourself with a musician	59.5
A vinyl album	59.2
Metal-themed magazines & books	58.9
An album that you own more than one of	53.1
Movies about metal	51.0
An item from belonged to a musician performing	50.7
Bootleg merch	49.3
Metal tapes/cassettes	47.5
A video game that is metal-themed	43.7
Metal-themed jewelry	38.7
An album that you have never listened to	35.2
A metal-themed hat or head gear	32.8
An album that you have never opened	29.9
Metal-themed drinking glasses or shot glasses	24.6
Metal-themed food, beer, hot sauce, etc.	24.3
Metal-themed drinking mug	22.3
Non-traditional clothing (Christmas sweater, etc.)	17.9
A professional print of a metal artwork / album cover	17.6
Metal-themed toys, action figures, bobbleheads, etc.	16.7
A metal-themed comicbook	16.1
A bullet belt	12.0
A metal-themed dress	6.5

Table 7: Percentage of metal members that own 30 of the most common metal artefacts

The third most common items indicated that nostalgia has prominent worth for metal members, as more than three fourths of the sample possessed ticket stubs and/or wristbands that they had saved from a concert that they had attended. The connection of metal members to their metal artefacts stretches beyond the borders of their own country, as about two thirds of the sample owned an album and/or clothing that they had imported from another country.

Almost two thirds of the sample owned at least one item that had been signed by a metal musician. More than half of the metal members had a photograph of themselves with a musician and owned an item that belonged to a musician performing on stage, such as a

guitar pick or drumstick. Presumably metal members' homes are adorned with metal-related artefacts too, as nearly two thirds of the sample reported owning metal-themed posters. More than half of the sample own physical copies of metal-themed literature, such as books and magazines. For about half of the sample, owning a single copy of a metal album isn't enough, as they own multiple versions/pressings/copies of the same album. Interestingly, metal fandom isn't limited to consumerism in ways that directly support bands, since about half of the sample also owned bootleg pressings of metal music or memorabilia. Metal seems to get incorporated into many aspects of life, since outside of the expected clothing and albums, many metal members also reported owning movies, books, food, drinks, and video games that are about metal or contain metal thematic content.

As some of the items would primarily be associated with women in the metal community, I looked at some of these items exclusively in the context of the 73 women in the sample. A fourth of the women in the sample (24.7%) owned a metal-themed dress, 57.5% owned metal-themed jewellery, 17.8% of them owned metal-themed leggings, and 12.3% of them owned metal-themed underwear or swimwear. Women also owned more non-traditional metal attire, such as a metal-themed scarf, socks, or Christmas sweater (27.4%).

#### 4.3.4. The emotional experience of preferred sub-genre results

Participants were asked what kinds of emotions they experience when they listen to black metal, death metal, doom metal, grindcore, and heavy metal. The emotional experiences measured were wonder, transcendence, tenderness, nostalgia, peacefulness, power, joyful activation, tension, and sadness. The goal with this analysis was to determine if the type of metal a person most identified with had an influence on their emotional experience. Only types of members where the sample had at least twenty participants were included in this part of the analysis, which left 275 participants for analysis out of the recruited total of 341. The analyses were then conducted using members of black metal (N =



83), death metal (N = 78), doom metal (N = 41), heavy metal (N = 28), power metal (N = 22), and thrash metal (N = 23). This excluded members of grindcore and power violence (N = 14), folk metal (N = 13), and progressive metal (N = 12). The “other” category was also excluded (N = 27).

In general, more numerous positive emotional feelings were experienced by members listening to their preferred subgenre or subgenres. To illustrate this, I will report the findings of death metal members’ emotions when listening to death metal when compared to non-death metal members’ emotions when listening to death metal following an ANOVA that utilized each emotion as a dependent variable and subgenre identity as the independent variable.

Subgenre identity had a significant effect on the affective experience of listening to different types of metal music, Wilks’ Lambda = .203,  $F(160,1183.63) = 2.81$ ,  $p < .001$ ,  $\eta^2 = .273$ . This continued to be the case when looking at subgenre-dependent affective experiences when listening to only death metal, Wilks’ Lambda = .671,  $F(40,1144.83) = 2.74$ ,  $p < .001$ ,  $\eta^2 = .08$ . The observed power was 1.00 for both tests, indicating a low possibility of Type 1 error. The lower effect size when looking strictly at listening to death metal likely reflects that the sample is primarily black, death, and thrash metal fans – all of which generally enjoy death metal. Including more disparate subgenres of metal members would likely make this effect stronger. The type of metal member had a significant influence on the experience of wonder,  $F(5,269) = 9.54$ ,  $p < .001$ ,  $\eta^2 = .151$ , transcendence  $F(5,269) = 10.20$ ,  $p < .001$ ,  $\eta^2 = .159$ , tenderness,  $F(5,269) = 5.36$ ,  $p < .001$ ,  $\eta^2 = .091$ , nostalgia,  $F(5,269) = 3.46$ ,  $p < .001$ ,  $\eta^2 = .117$ , peacefulness,  $F(2,269) = 14.21$ ,  $p < .001$ ,  $\eta^2 = .209$ , power,  $F(2,269) = 3.92$ ,  $p = .002$ ,  $\eta^2 = .068$ , joyful activation,  $F(2,269) = 7.14$ ,  $p < .001$ ,  $\eta^2 = .117$ , and tension,  $F(5,269) = 2.91$ ,  $p = .014$ ,  $\eta^2 = .051$ , while listening to death metal music. There was not a significant relationship found between the type of member and their experience of sadness while

listening to death metal,  $F(5,269) = 2.05$ ,  $p = .07$ ,  $\eta^2 = .037$ . The observed power for each test was .94 or higher with the exception of tension (.85) and sadness (.68).

Bonferroni multiple comparisons tests were run to explore how death metal members emotionally experience death metal music compared to members of black, doom, heavy, power, and thrash metal. These comparisons can be found in Table 8. Death metal members experienced significantly higher levels of wonder when listening to death metal ( $M = 2.40$ ) when compared to members of black metal ( $M = 1.75$ ,  $p < .001$ ), doom metal ( $M = 1.85$ ,  $p = .002$ ), heavy metal ( $M = 1.69$ ,  $p < .001$ ), and power metal members ( $M = 1.57$ ,  $p < .001$ ). Death metal members did not differ significantly in how they experienced wonder when compared to thrash members' ( $M = 2.19$ ) experience of listening to death metal. Death metal members experienced significantly higher levels of transcendence ( $M = 2.46$ ) while listening to death metal than when members of black metal ( $M = 1.80$ ,  $p < .001$ ), doom metal ( $M = 1.93$ ,  $p = .002$ ), heavy metal ( $M = 1.82$ ,  $p = .001$ ), or power metal ( $M = 1.41$ ,  $p < .001$ ) listen to death metal. This could indicate higher levels of perceived sacredness for death metal members when listening to death metal when compared to other types of music members listening to death metal, as transcendence is sometimes regarded as fundamental to the sacred (Pargament & Mahoney, 2005a). Thrash metal members did not differ significantly ( $M = 2.12$ ) in how they experienced transcendence when listening to death metal when compared to death metal members. Death metal members experienced significantly higher levels of tenderness ( $M = 1.78$ ) in response to death metal than members of black metal ( $M = 1.35$ ,  $p < .001$ ), doom metal ( $M = 1.38$ ,  $p = .02$ ), heavy metal ( $M = 1.34$ ,  $p = .02$ ), and power metal ( $M = 1.25$ ,  $p = .01$ ). Once again, no difference was found between death metal and thrash members ( $M = 1.58$ ) when listening to death metal.

Emotion		Black	Death	Doom	Heavy	Power	Thrash
Wonder	Black	1	.65***	.09	.06	.18	.44
	Death		1	.55**	.71***	.83***	.21
	Doom			1	.16	.28	.34
	Heavy				1	.12	.50
	Power					1	.62
	Thrash						1
Transcendence	Black	1	.66***	.12	.02	.29	.32
	Death		1	.53**	.64***	.95***	.34
	Doom			1	.11	.42	.19
	Heavy				1	.31	.30
	Power					1	.61
	Thrash						1
Tenderness	Black	1	.43***	.03	.02	.10	.23
	Death		1	.40*	.44*	.52*	.19
	Doom			1	.04	.13	.20
	Heavy				1	.08	.25
	Power					1	.33
	Thrash						1
Nostalgia	Black	1	.52***	.00	.08	.17	.26
	Death		1	.52**	.60**	.68***	.26
	Doom			1	.08	.16	.26
	Heavy				1	.09	.34
	Power					1	.42
	Thrash						1
Peace	Black	1	.84***	.03	.03	.22	.32
	Death		1	.82***	.82***	1.06***	.53
	Doom			1	.00	.25	.29
	Heavy				1	.25	.29
	Power					1	.54
	Thrash						1
Power	Black	1	.28	.03	.19	.33	.39
	Death		1	.31	.47	.61*	.11
	Doom			1	.16	.30	.42
	Heavy				1	.14	.58
	Power					1	.72*
	Thrash						1
Joy	Black	1	.49***	.00	.21	.31	.41
	Death		1	.49*	.70***	.80***	.09
	Doom			1	.21	.31	.40
	Heavy				1	.10	.61
	Power					1	.71*
	Thrash						1
Tension	Black	1	.14	.18	.16	.25	.14
	Death		1	.32	.02	.40	.00
	Doom			1	.34	.07	.32
	Heavy				1	.42	.02
	Power					1	.39
	Thrash						1
Sadness	Black	1	.19	.05	.12	.01	.18
	Death		1	.14	.31	.21	.38
	Doom			1	.17	.07	.24
	Heavy				1	.11	.06
	Power					1	.17
	Thrash						1

Table 8. Bonferroni multiple comparisons. Mean differences shown between emotion ratings after listening to death metal music based on type of metal member.

\* The mean difference is significant at the .05 level; \*\* at the .01 level; \*\*\* at the .001 level

Nostalgia for death metal members ( $M = 2.24$ ) was higher than for members of black metal ( $M = 1.72$ ,  $p < .001$ ), doom metal ( $M = 1.72$ ,  $p = .002$ ), heavy metal ( $M = 1.64$ ,  $p = .002$ ), and power metal ( $M = 1.56$ ,  $p = .001$ ) when listening to death metal music, but not for thrash metal members ( $M = 1.98$ ). Death metal members experienced significantly higher levels of peacefulness ( $M = 2.51$ ) when listening to their preferred subgenre of metal than when members of black metal ( $M = 1.67$ ,  $p < .001$ ), doom metal ( $M = 1.69$ ,  $p < .001$ ), heavy metal ( $M = 1.69$ ,  $p < .001$ ), and power metal ( $M = 1.45$ ,  $p < .001$ ) listening to death metal. Thrash metal members had marginally lower experiences of peacefulness ( $M = 1.98$ ,  $p = .056$ ) when listening to death metal when compared to death metal members. Interestingly, the only subgenre of member that experienced power while listening to death metal

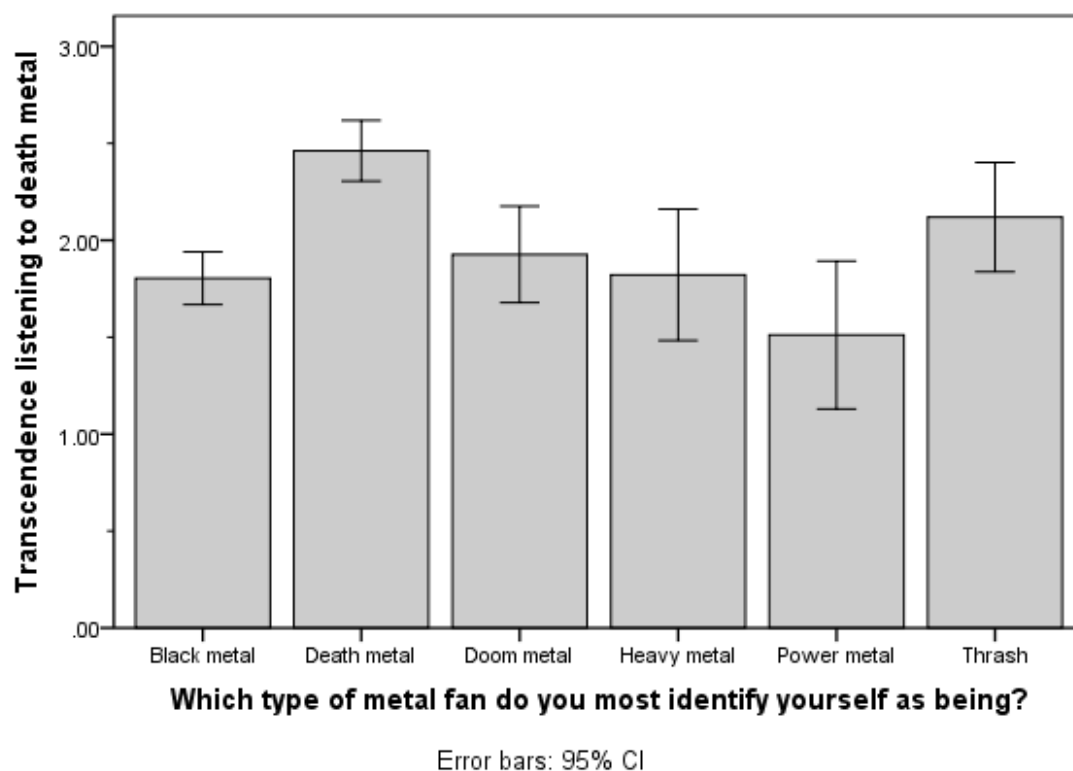


Figure 1. The emotional experience of transcendence while listening to death metal by six types of metal members.

significantly less than death metal members ( $M = 2.62$ ) was the most disparate subgenre from death metal in the sample, which was power metal members ( $M = 2.01$ ,  $p = .02$ ). Death metal

members experienced significantly higher levels of joy ( $M = 2.73$ ) while listening to death metal than members of black metal ( $M = 2.24$ ,  $p = .001$ ), doom metal ( $M = 2.34$ ,  $p = .02$ ), heavy metal ( $M = 2.03$ ,  $p = .001$ ), or power metal members ( $M = 1.93$ ,  $p < .001$ ) when listening to death metal.

Thrash metal members did not differ significantly in their experience of joy when listening to death metal when compared to death metal members. No significant differences were found for how different types of metal members experience tension or sadness in response to death metal. As a visual example of how these differences look, see Figure 1 to see how different types of metal members experience transcendence when listening to death metal.

#### 4.3.5. Religious language & idolization results

An exploratory Pearson correlation was run to understand the relationship between the two idolization subscales with behaviour, metal identity, and commitment to metal. The connection to the musician and the connection to the music subscales were positively correlated with each other at the .01 significance level ( $r = .56$ ). Seeing a musician as something beyond the ordinary was positively related to commitment to metal ( $r = .43$ ,  $p < .01$ ), familial commitment to metal ( $r = .19$ ,  $p < .01$ ), metal identity ( $r = .18$ ,  $p < .01$ ), and all four types of metal behaviour (personal,  $r = .47$ ,  $p < .01$ ; materialism,  $r = .28$ ,  $p < .01$ ; aesthetic,  $r = .36$ ,  $p < .01$ ; community support,  $r = .26$ ,  $p < .01$ ). In other words, people that are actively involved in metal behaviours, have a strong metal identity, and a strong commitment to metal as a lifestyle, and are also more likely to describe their favourite musicians using sacred-like language, communicating that they see the musician as something more than a musician. Similarly, having a strong connection to that individual's music is associated with significantly higher levels of positive commitment ( $r = .50$ ,  $p < .01$ ), familial commitment ( $r = .12$ ,  $p < .05$ ), metal identity ( $r = .17$ ,  $p < .01$ ), and all four types of behaviours (personal,  $r =$

.50,  $p < .01$ ; materialism,  $r = .29$ ,  $p < .01$ ; aesthetic,  $r = .21$ ,  $p < .01$ ; community support,  $r = .22$ ,  $p < .01$ ).

#### 4.4. Discussion and conclusions

A number of areas were explored in this study. It was investigated how commitment to metal and identifying as a metal member influenced behaviour, and consistent with Bergami & Bagozzi (2000), both were associated with higher ratings of the four types of metal behaviours. Metal members with a stronger metal identity also had higher levels of positive commitment to the worldview, their commitment to metal was more salient, and they more frequently performed personal, materialistic, aesthetic, and community supportive behaviours, some of which reflect higher fulfilment of forward-driving and socially-driven psychological needs. To explain further, dedicated metal members that strongly identified as metal members were more likely to perform experiential behaviours like headbanging along to metal music, they'd be more likely to use metal music as a motivator to pursue their goals, as was found from the motivational behaviour items (e.g., When I want to accomplish a goal, I listen to metal music for motivation), they'll have higher levels of consumerism in regards to metal memorabilia and physical pressings of music, attend more concerts, dress more often in a metal fashion, and they'll be more involved in supporting their local metal music scene. This is consistent with previous claims that metal members are intensely involved in their musical lifestyle (Guibert & Guibert, 2016; Weinstein, 2000; Weinstein, 1991). These behaviours that are prominent for committed metal members have the potential to be regarded as sacred within a metal worldview. This is an area that future research could explore that is not the focus of the subsequent studies in this thesis.

The second focus of this study was to identify the most common artefacts that metal members own. The vast majority of metal members owned band shirts or hoodies, physical versions of metal music (primarily on compact disc), they saved nostalgic artefacts (entry

wristbands and ticket stubs) from previous metal shows, most had signed memorabilia, and metal posters, which means that metal members probably have some level of metal-related ornamentation in their homes. These findings were used to build a framework for the third study of this thesis, which investigated the most sacred artefacts to metal members. To explore which cultural artefacts are considered sacred by metal members, these identified common artefacts are a good starting point for determining a metal artefact as a candidate for being sacred.

Prior to exploring sacred music in the sixth chapter, the third of goal of this study was to identify the extent to which the affective experience of metal music is dependent on subgenre preferences. The emotional reaction to each subgenre of metal was dependent on what type of metal that each member identified with. In general, people experienced similar emotional responses while listening to subgenres that were acoustically aligned with their preferred subgenre, whereas the largest differences in emotional reactions to music were found when music members listened to metal genres that were acoustically different from their preferences. In the case covered in the results section, death metal and thrash metal members both experienced death metal music in similar ways, which is probably because death metal as a subgenre has roots in and largely evolved from thrash metal, so there is more musical overlap between those subgenres than many other metal subgenres. It is possible that more differences exist between how thrash and death metal members experience death metal music, but that the more nuanced differences were not detected due to the small number of thrash members in the sample ( $N = 23$ ). This contrasted with other types of members, such as power metal members, which had the largest differences with death metal members in how they experienced death metal music. This makes sense as power metal and death metal are the most disparate subgenres of music from the styles assessed in this study, so there was the least amount of overlap between members of those two subgenres and what they enjoy.

Overall, each member experienced stronger emotional reactions to music when listening to their preferred subgenre than other subgenres of metal.

The individualized nature of emotional experiences while listening to a preferred style of music was used to develop a framework to study sacred metal music in the sixth chapter, where it was assumed that perceived sacredness of metal music would be similarly individualized among members of specific subgenres. Knowing that the experience of metal music is dependent largely on the type of metal member that a person is and the type of metal that they're listening to, it is likely the case that sacred metal music would be subgenre and identity consistent, as those are the conditions under which the most intense emotional connection to the music are experienced. This part of the study is somewhat limited because although frequencies of listening to each subgenre of metal music were included, there was not a measure of familiarity to each subgenre to guarantee that all metal members' perceptions of subgenres that they listen to less frequently were accurate. A future study could have metal members identify the subgenre of a series of music clips, to see if metal members could accurately identify subgenres that they were less familiar with, or if they would apply more general stereotypes to musical subgenres that they actively avoid. This would guarantee the accuracy of emotional responses in response to different subgenres of metal.

The final part of this study was to determine if dedicated metal members frequently use sacred-like language to describe their favourite musicians, which could build towards future studies on the secular sacred. Even though metal members are overwhelmingly atheist, agnostic, or not affiliated with any religion, it was found that the most dedicated metal members still frequently described their favourite musicians as gods and as larger-than-life figures, giving further credence to the notion that the metal worldview functions much like a religion (Moberg, 2012), even to the extent that it uses language and symbols that are



traditionally associated with religion. Using sacred-like language to describe metal musicians was also related to metal behaviours and metal identity, so it appears that the more a metal member is involved in the metal way of life and the more they identify with it, the more likely they are to use sacred-like language to describe their favourite musicians.

What this study has not shed light on is what exactly it means when a metal member describes a metal musician as a god or an immortal, since the cultural context of that use of language could be different from religious worldviews. A future study could explore the use of language among metal members and the meaning behind that language, in case it is more symbolic than literal, or has a different meaning altogether.

It was recognized that the length of the survey, which extended past one hour in length for some participants, could have been a potential confound for recruiting a representative sample of members of specific subgenres. For instance, a one hour-long survey might be less tedious for a doom metal member that is accustomed to albums over an hour long and with songs that range in length from ten minutes to one hour, than a grindcore member accustomed to albums that are sometimes only fifteen minutes long with songs that range from five seconds to two minutes in length. If each respective group of members has an affinity for entertainment and engaging behaviours that demand little or much time, this might also be true of their ability to tackle a survey about that same topic. The same method was used for recruited members of each subgenre, yet 41 doom metal members participated in and completed the survey, whereas only 14 grindcore/power violence members completed the survey. It could be that there is a relationship between attention span and an affinity for long versus short music (future research could pursue this direction), and if that was true, it could explain the difficulty in trying to recruit grindcore members to participate in a long survey. Some evidence of this is provided by Coggins (2016) who had a participant that described metal music with longer songs as making them more patient. This was anticipated

by the researcher, so a question was included at the end of the survey that asked if the participant enjoyed taking the survey, in case grindcore fans disproportionately disliked the survey. This information was plugged into an analysis and did not find an effect based on type of metal member, however, it could be that most grindcore members just avoided taking the survey, which seems apparent by the small grindcore sample size compared to other subgenre members that were recruited using the same method.

The goal of this study was to build a framework for which the secular sacred could be investigated in the form of behaviours, objects, music, and people. This thesis further explores the effects of music and sacred objects in the subsequent chapters.

## Chapter 5: Further characterizations: moral foundations and lyrical preferences

### 5.1. Introduction

Although the main aim of this thesis is to explore the secular sacred, the first study of the thesis was designed to allow for research across multiple inquiry domains. This chapter includes data collected during the first study that focused on the role of moral reasoning in lyrical preferences in particular, since lyrics are important to a worldview rooted in a music subculture. This is an area of substantial interest because there is an on-going debate in popular culture about the relationship between various forms of violent media, negative behaviour, and immorality.

This chapter focuses on the example of music, from which generalities are often made between socially taboo lyrics (e.g., content that includes sexuality, violence, drugs, suicide, etc.) and actual behaviour. The associations between lyrics and immoral behaviour often don't hold up under scrutiny, and studies rarely account for lyrical preferences and their precursors. Currently there is evidence of many precursors to media preferences, including emotional vulnerability/content relatability (Baker & Bor, 2008), personality factors (Chory & Goodboy, 2011; Krcmar & Kean, 2005), and an individual's pre-existing ideology (Kiilakoski & Oksanen, 2011). This study builds on previous studies of media preferences by using a pre-established precursor – personality traits – as a basis to look at an additional precursor: moral reasoning styles. Understanding how moral reasoning relates to lyrical preferences can help us understand the relationship between morality and media preferences, which might be used in future research on how lyrics take on a sacred significance, particularly when those lyrics reinforce an individual's moral views.

This research area — that of moral reasoning as a precursor to media preferences — is provided here as a separate chapter, since it is a separate topic from that of the secular

sacred. Previous literature suggest that individuals embrace lyrics which are associated with certain stable characteristics of that person, including ideology and personality traits, which are explained later in the present chapter. The chapter will also critically review popular media arguments which claim that certain controversial lyrics ‘corrupt’ music listeners, rather than music listeners seeking out those lyrics because they are consistent with their pre-existing moral reasoning styles. Following this, the main focus of the chapter is about the role of moral reasoning and personality traits in predicting lyrical preferences, which are explored through additional quantitative data that was collected during the first study of this thesis.

#### 5.1.1. The relationship between metal music and behaviour

Despite metal members being consistently stereotyped as immoral (Aarons, 2018; Meij, Probstfield, Simpson, & Knottnerus, 2013; Mendoza, Varas-Diaz, & Rivera-Segarra, 2018; Spraken, 2018) and empirical data showing that they are no less moral than their non-metal counterparts in regards to aspects like violent imagery processing (Sun, Lu, Williams, and Thompson, 2019), the subject of metal members' morality persists in being a topic of public interest due to the imagery and lyrical content associated with metal music — often interpreted by non-metal members as morally and socially taboo. Metal music, along with other genres such as rap music, have been especially targeted by critics who claim that the lyrics associated with those genres of music lead to violence, adolescent sexuality, and misogyny. These fear tactics have been used to garner public support for the regulation of metal music (Lynxwiler & Gay, 2000), as well as for jazz (Phillips & Owens, 2004), rock, and rap music (Winfield & Davidson, 1999). Similar claims have been used to censor other forms of consumptive entertainment, including literature (Bald, 2011; Carlson, 2018), film (Lyden, 2009), and video games; however, the focus of this research is on metal music. Metal music is an intense form of counter-cultural music that is heavily associated with sensation-seeking and arousal (Weisskirch & Murphy, 2004), which is probably why it is associated

with deviance as well. Heavy metal music is frequently associated with drug use, suicide, and other negative behaviours, but there is no obvious causal relationship, as this musical preference is often indicative of pre-existing emotional vulnerability (Baker & Bor, 2008). Even for those metal fans that indulge in drug use as a coping mechanism early in life, their metal cultural identities work as a protective factor from negative outcomes (Howe et al., 2015); furthermore, there are often gender and cultural differences in whether or not that association is accurate (Mulder et al., 2009).

The association between metal lyrics and negative behaviour in popular media largely began in 1985 when an American committee, known as the Parents Music Resource Centre (PMRC), led a movement that put strict restrictions on the purchasing of music with crude lyrical themes. The PMRC specifically targeted a number of rock and metal bands, including Judas Priest, Mötley Crüe, AC/DC, Twisted Sister, W.A.S.P., Mercyful Fate, Black Sabbath, Def Leppard, and Venom. These artists were targeted for their lyrical subject matter, which dealt with sex, violence, vulgar language, the occult, and drug use. The PMRC reduced the accessibility of metal albums with violent, drug-related or sexual themes by labeling albums with Parental Advisory stickers if they included any of that content. The legacy of politicians and media outlets citing metal music as dangerous or stating that it could lead to negative behaviour continues today, such as when a school shooting occurs and the shooter happens to be a fan of metal music with violent lyrics. The media assume a causal link, or at least promote a causal link in their attention-grabbing headlines between metal music lyrics including bands such as Judas Priest, Slayer, and Ozzy Osbourne with violent acts or suicide, even though empirical investigation has found that these violent offenders actively search for lyrics that enforce their own pre-existing ideas about revolutionary violence (Kiilakoski & Oksanen, 2011). It is not the case that the shooters commit acts because of the lyrics, but rather, they seek out lyrics that reinforce views that they already have. Further, although

those associations are frequently debunked, there is little in-depth in the literature about metal lyrics and their relationship with moral reasoning. This is particularly true when focusing on extreme metal music subgenres, which have large and global fanbases, but that frequently have much more socially taboo lyrics than what popular artists like Judas Priest and Ozzy Osbourne incorporate. For instance, brutal death metal and slam are subgenres of death metal that are largely distinguished by lyrics about the torture, forceful penetration, and ritual murder of people, often exclusively women.

Black metal can have largely anti-Christian lyrics that embrace Satan and Satanism as a positive and guiding force. Depressive suicidal black metal (DSBM) focuses exclusively on extremely negative emotions, including suicidal ideation, which is also found to an extent in doom metal. Often, more extreme lyrics are meant to be counter-cultural by embracing taboo topics and themes, and even without that intentionality, they're likely to be perceived that way within a broader, non-metal cultural context (Kjelm, Kahn-Harris, & LeVine, 2012). Music fans in general frequently listen to music because it relieves stress, and that effect is all the stronger when the individual chooses the music that they listen to due to the fundamentally important role of personal preferences (Labbé, Schmidt, Babin, & Pharr, 2007). This may also extend to other forms of consumptive media, as it has been found that violent media can often be used as a coping mechanism to deal with pre-existing stressors (Labbe et al., 2007). Additionally, in the specific case of metal music, it has been found to serve as a buffer for death anxiety (Kneer, & Rieger, 2016). Further, even though metal music is stereotypically associated with negative emotions and behaviours, metal music fans can have lower levels of depression and anxiety than the general population (Recours, Aussaguel, & Trujillo, 2009), and negative behaviours from members of music cultures are often associated with the behaviour of peers rather than the music itself (Miranda & Clen, 2009).

Metal music, and particularly extreme subgenres like death metal, are frequently regarded as violent media comparable to horror movies or violent video games. As previously noted, violent media is frequently associated with negative or violent behaviour (Anderson, & Bushman, 2002; Bushman & Huesmann, 2006), but those studies are frequently called into question due to methodological issues or publication bias (Ferguson & Kilburn, 2009). Some studies even conclude that there is an inverse relationship between violent media and actual violence, as is the case with video games (Beerthuizen, Wijters, & van der Lann, 2017; Markey, Markey, & French, 2015). There is limited research investigating the relationship between lyrical preferences and violence, but a recent study found that those who prefer violent lyrics are no less repulsed by violent imagery than those who do not prefer those lyrics, meaning that fictitious violence (at least in lyrical form) does not desensitize people to real violence (Sun, Williams, & Thompson, 2019). Similar effects have been investigated in regard to other types of lyrics. For instance, it has been claimed that prosocial lyrics can lead to prosocial behaviour (Anderson, Carnagey, & Eubanks, 2003; Jacob, Guéguen, & Boulbry, 2010; Ruth, 2017), although that finding cannot always be replicated (Pieschl & Fergers, 2016). The effect of lyrics on behaviour is not unique to prosocial lyrics, as studies have found that aggressive lyrics can lead to more aggression, romantic lyrics can lead to increased compliance in a courtship request (Guéguen, Jacob, & Lamy, 2010) and misogyny can be decreased using pro-equality lyrics (Greitmeyer, Hollingdale, Traut-Mattausch, 2015). However, all of these studies use experimental settings with predetermined music with lyrics as stimuli, which is far different from the experience of listening to music in real life. People typically seek out music based on their own preferences, rather than being given lyrical content that was chosen for them by a researcher and within a lab setting. They also fail to take *context* into consideration, since being provided violent lyrics in an experimental setting is likely different from listening to preferred music with violent lyrics in a setting intended to

fulfil a specific function (e.g., motivation) from aggressive music, such as at the gym.

Subsequently, a distinction should be made between being experimentally primed with lyrics versus an ecologically valid setting where you choose your music.

It has been found that metal music serves as stress-relief for fans of metal music, which is contrary to claims that it induces violent behaviour (Eischeid, Kneer, & Englich, 2019). These positive effects are not limited to lyrical content either, as the musical structure of metal music also has alleviating effects for some users (Messick, Aranda, & Day, 2019), and these qualities extend to other styles of music too, as long as they are genres that the listener prefers (Yamasaki et al., 2016). The relationship between metal music and violence is especially weak when accounting for mediating factors. For example, personality factors can predispose people to liking violent media, making any relationship with violence reflective of the person's personality, rather than their choice of media entertainment (Chory & Goodboy, 2011; Krcmar & Kean, 2005). Violent lyrics have been associated with hostile feelings (Anderson, et al., 2003), but this study failed to control for lyrical preferences. It is likely that violent lyrics have a different influence on an individual who prefers violent lyrics than on a person who is unwillingly bombarded with lyrics that they find to be immoral, disgusting, uncomfortable, and/or disturbing. Generally, people who listen to music with violent lyrics choose to do so, rather than being forced to do so, causing a lack of generalizability in past research findings. The present study makes the distinction between different types of lyrical preferences to account for one of the main methodological problems with the literature (e.g. Anderson, et al., 2003).

### 5.1.2. Explaining the lyrical scapegoat: Moral panic theory

Before exploring moral reasoning as a precursor to lyrical preferences, it's important to understand why metal lyrics, and other forms of violent media such as video games or other genres of music, are blamed for immoral actions despite empirical evidence of the



contrary. One of the leading explanations for why video games and music are blamed for violence following tragic events is moral panic theory which:

...suggests a panic or overreaction to forms of deviance or wrong doing believed to be threats to the moral order. Moral panics are usually framed by the media and led by community leaders or groups intent on changing laws or practices...Moral panics gather converts because they touch on people's fears and because they also use specific events or problems as symbols of what may feel to represent 'all that is wrong with the nation'. (Drislane & Parkinson, 2016)

Similarly, Stan Cohen developed a processual model of moral panic that is one of most widely utilized moral panic models. He described moral panic this way:

Societies appear to be subject, every now and then, to periods of moral panic. A condition, episode, person or group of persons emerges to become defined as a threat to societal values and interests; its nature is presented in a stylized and stereotypical fashion by the mass media; the moral barricades are manned by editors, bishops, politicians and other right-thinking people; socially accredited experts pronounce their diagnoses and solutions; ways of coping are evolved or (more often) resorted to; the condition then disappears, submerges or deteriorates and becomes more visible. Sometimes the object of the panic is quite novel and at other times it is something which has been in existence long enough, but suddenly appears in the limelight. Sometimes the panic passes over and is forgotten, except in folk-lore and collective memory; at other times it has more serious and long-lasting repercussions and might produce such changes as those in legal and social policy or even in the way the society conceives itself. (Cohen, 1973, pg.9)

Cohen's model has three stages. In the first stage claims are exaggerated and distorted; in the second a terrible outcome is predicted if action is not taken (e.g. banning metal music, as the

Parent Music Resource Center attempted in the 1980s), and in the third stage problems are symbolised as in associating the term 'rocker' with threat (Critcher, 2017).

Another widely utilized moral panic model is that of Erich Goode and Nachman Ben-Yehuda (1994). Theirs is an attributional model that challenged the assumption that social problems could be defined, measured, explained, and ameliorated (2009). They described five characteristics of moral panics, including: (1) concern, where there is a heightened level of concern about certain groups or categories, (2) hostility, where one can observe an increase in hostility towards the 'deviants' of 'respectful society', (3) consensus, where a consensus about the reality and seriousness of a threat can be found, (4) disproportionality, where public concern is in excess of what 'should' be, and (5) volatility, where the panic is temporary and fleeting and though it might reoccur, the panic is not long lasting.

While there are differences in both models, they both maintain a focus away from the validity of claims and their justifications, and instead focus on the dynamics of the social changes that occur when a threat is perceived. Moral panic theory has been applied in the context of many social problems, such as in response to street crime, drug and alcohol consumption, immigration, child abuse (including pedophilia), and media technologies (Critcher, 2017). It serves a polarizing role in its use of placing blame on particular explanations for immoral behaviour, such was the case in the 'sexual dangers' of jazz and swing music in the 1930s & 40s (Lynxwiler & Gay, 2000), and causes people to defend or firmly stand with explanations that put the blame for violence on video games and musical lyrics, be it rap music, or as is applicable in the current context, metal lyrics. Often the end result or 'solution' is a change in regulations, law, or the way in which a law is enforced. In the metal context, as mentioned earlier, it resulted in the development of the Parent Music Resource Center (PMRC), who further sought governmental intervention to regulate metal lyrics (Lynxwiler & Gay, 2000). However, since the perceived threats of metal lyrics (e.g.,

sexual promiscuity, violence) were largely only perceived threats and not actual threats, the laws and regulations that were created in response to them were more of a formality than reflective of a societal change in attitudes, to reinforce the values of a society that could not condone vulgar lyrical content (Critcher, 2008).

It should be noted that moral panic theory is not without its critics, who claim that these theories are outdated as they do not have an updated view of mass media, their operationalization is often vague, they don't include a focus on the promoters and supporters of moral panics, and they ignore insights from recent theories about moral regulation of risk, among others (Critcher, 2017; Paterson & Stark, 2001). However, they offer a widely accepted explanation as to why violent media, including metal lyrics, are often the target of societal blame when tragedy occurs. This contextualizes popular associations between lyrics and behaviour, but it doesn't explain where lyrical preferences stem from.

### 5.1.3. Moral reasoning and media consumption

Moral Foundations Theory (MFT) is a social intuitionist perspective which states that human moral reasoning originates from innate, modular foundations. It assumes that morality is a trait-like disposition that guides behaviour, attitudes, and communication through content-specific evaluative procedures that act as motivating principles. It was created by a group of social and cultural psychologists to understand how morality varies across different cultures. MFT has been shown to work across different cultures (Davies, Sibley, & Liu, 2014), but this is the first study to apply it to metal culture. MFT states that the usage of different moral foundations is based on interactions between biology, cultural socialization, and individual experiences (Haidt, 2012). Moral foundations have previously been used to explore the relationships between moralities and political ideology, personality, stereotyping, attitudes, emotion, cultural differences, intergroup relations, moral cognition, and more (Graham et al., 2013). Moral foundations have been associated with a number of behaviours

and attitudes that distinguish different types of people, such as actions towards climate change (Dickinson, McLeon, Bloomfield, & Allred, 2016), religion (Krull, 2016), political alignment (Graham, Haidt, & Nosek, 2009), or vegetarianism (De Backer & Hudders, 2015). Due to MFT's wide and successful application across multiple cultures, it was selected to explore the relationship between moral reasoning and lyrical preferences in metal culture, and will also be applied to investigating differences in types of metal fans.

The five moral domains that encompass MFT are intended to be innate, global psychological systems from which unique moralities can be drawn. Each of the foundations provides a point within a dichotomous spectrum between polar opposites, with the moral end being the higher scoring end. For example, someone with a higher score on care/harm morally reasons towards being more caring, and less harming towards others. The first foundation, care/harm, reflects the ability to empathize with the struggles of others. The second foundation, fairness/cheating, is about reciprocity and concerns about equality. It is from this moral foundation that ideas of justice and proportionality are derived. The third domain is loyalty/betrayal, which reflects how humans live in groups, how they can be patriotic towards that group, and are willing to self-sacrifice for their group. Authority/subversion is the fourth moral domain, which is about leadership and followership, respect for traditions, and how cultures can have a hierarchical social structure. Lastly, sanctity/degradation is the last moral domain, which is heavily influenced by the psychology of disgust and contamination. This final moral domain ties into religious beliefs, and living a less carnal, nobler life, where the body is seen as a holy place that should not be desecrated.

MFT has previously been applied to explore the relationship between moral foundations and other forms of media preferences. For instance, the salience of multiple moral foundations has been found to predict moral reasoning while playing video games. Further, it has been suggested that playing violent video games could change moral reasoning

toward real-life violence, but more research is needed before making that conclusion (Krcmar & Cingel, 2016). Gamers often claim that there is a separation between how real violence and video game violence is processed, and unjustifiable violence in video games generates guilt responses similar to real violent scenarios, indicating that video games can trigger moral responses in users (Hartmann, Toz, & Brandon, 2010). Further, feelings of guilt and negative affect in violent video games are reduced by framing the game as ‘just a game’ or by justifying the violence through familiarity with the game or through the narrative (Hartmann & Vorderer, 2010), thus how violent media is contextualized and interpreted seems to play an important role in understanding its relationship with moral behaviours. Outside of video games, moral foundations have been used to understand how people enjoy violent content within television and movies, using MFT as a way to divide subcultural responses to violent media (Tamborini, 2011; Tamborini, Eden, Bowman, Grizzard, & Lachlan, 2012). In the case of violence in metal music, the descriptions are often so violent that they’re claimed to be a parody or cartoonishly unrealistic, thus separating them from real violent events, but it hasn’t yet been explored how moral reasoning relates to these forms of lyrical preferences and if these lyrical preferences reflect an individual’s moral reasoning processes, or if, like in the case of video games, these violent depictions are processed similarly to real acts of violence.

#### 5.1.4. The current study

Moral reasoning styles explain many characteristics of people, including attitudes (Low & Wui, 2016) and preferences. The main hypothesis in this study is that lyrical preferences stem, at least in part, from moral reasoning styles. Evidence has already been found that moral reasoning styles act as a precursor for preferences, as is the case of ideological preferences (Weber & Federico, 2013), but little has been connected thus far in regards to more common, everyday preferences, such as lyrical preferences. In the context of this thesis, the focus is on lyrical preferences among metal members. Heavy metal music

culture is a conglomerate of distinct music cultures that differ in sound, aesthetic, and cultural norms (Larson, 2013). Each subgenre of metal has specific types of lyrics, which makes it a possible way to account for some of the major cultural differences across metal music fans. For instance, heavy metal and power metal are genres that frequently have lyrical themes about metal fans unifying, embracing metal culture, having pride, and fighting honourably. Black metal frequently has more melancholic themes such as darkness, Satanism, and is frequently about struggling in cold climates. Death metal appropriately and stereotypically deals with the topic of death, often detailing murders in gruesome, horrifying, or sexually depraved ways. Doom and progressive metal frequently deal with lyrical themes that are about struggle and inner emotional turmoil.

It is expected that lyrical preferences are firstly shaped by personality traits, and secondarily by moral reasoning styles. This will be tested in the following way: 1) by developing a lyrical preferences scale that categorizes similar lyrical preferences into factors that can be used to compare different types of music listeners, 2) by examining if there are moral reasoning differences between types of metal fans, 3) testing the relationship between moral foundations and lyrical preferences, and 4) investigating the additional role of moral reasoning alongside personality types in explaining metal lyrical preferences.

It should be noted that as this is an extension of the study explored in the fourth chapter of this thesis, here I will not repeat the participant information and procedure, as these can be found in the previous chapter.

## 5.2. Materials and measures

The survey included general demographic items as well as measures for lyrical preferences (e.g., To what extent do you enjoy lyrics about love and romance?), the Big Five Inventory (BFI; John & Srivastava, 1999), and the 20-item short version of the Moral

Foundations Questionnaire (MFQ), which had participants determine the extent to which they agreed with a series of moral statements, (e.g., One of the worst things a person could do is hurt a defenceless animal) (Graham, Haidt, & Nosek, 2008). As noted in section 4.2.3.1., the reliabilities for the BFI were satisfactory (agreeableness  $\alpha = .76$ , conscientiousness  $\alpha = .76$ , extraversion  $\alpha = .82$ , neuroticism  $\alpha = .84$ , openness  $\alpha = .72$ ). The scores on the MFQ items were added, so each participant received a possible score out of 24 for each moral foundation (6-point Likert scale, 4 items per foundation). The reliabilities for each of the five Moral Foundations subscales can be found in Table 1. Each of the subscales consisted of four items.

Moral Foundations Scale	Cronbach's Alpha
Care / Harm	.66
Fairness / Cheating	.59
Loyalty / Betrayal	.60
Authority / Subversion	.66
Sanctity / Degradation	.71

**Table 1.** Cronbach's Alpha levels for the Moral Foundations subscales.

### 5.2.1. Measuring metal lyrical preferences

A list of common lyrical content of songs for different music genres was compiled, which was used to develop a list of 35 common lyrical topics. In the current study, I used a 5-point Likert scale (1 = I greatly dislike lyrics like this, 2 = I don't like lyrics about this, 3 = I'm indifferent to lyrics about this, 4 = I like lyrics about this, 5 = I greatly enjoy lyrics about this) to ask about lyrical preferences. Following principle component analysis using the Varimax Rotation technique with Kaiser normalization and the analysis of a scree plot I found five factors. The component cut-off value for exclusion was set at .30. The only lyrical theme that did not load into any factor was a preference for lyrics of religious themes, thus that lyrical preference was excluded from further analyses. The breakdown of these factors and their reliabilities can be found on Table 3 and the individual items and their

Factor 1: Vulgar/immoral lyrics	1	2	3	4	5
- Sexual intercourse	.67	.36			
- Horror	.58				
- Extreme sexual acts	.81				
- Lyrics that are over-the-top and completely ridiculous	.41	.40			
- The dismemberment and/or forceful penetration of women	.74				
- Bodily functions, such as peeing, pooping, or about a woman's menstrual cycle	.70				
- Gory lyrics about themes such as mutilation and murder	.78				
- Anything that is taboo	.63				
- Gang-related activities	.48	.35			
- Anti-Christian or Satanic lyrics	.47	-.32			
Factor 2: Lyrics that embrace metal culture and fun					
- Unity		.61			
- Metal and being a part of metal		.60			
- Money and getting rich		.54			
- Lyrics about empowerment and conquering obstacles		.46	.44		
- Honor and pride		.47	.50		
- Humorous		.61			
- Partying/drinking		.60			
- Cheesy lyrics		.50			
Factor 3: Lyrics about the human experience					
- Deep, emotional themes			.81		
- Tranquility		.35	.59		
- Love and romance		.43	.44		
- Heavy topics about things like depression and emotional turmoil			.76		
- Hardships, struggle			.73		
- Peace			.57		
Factor 4: Lyrics embracing history, mythology, and nature					
- War / battle				.76	
- Mythologies, such as Norse or Egyptian gods				.69	
- Fantasy lyrics, such as about dragons and knights				.60	
- Landscapes and seasons, such as mountains and winter			.41	.53	
- Historical time frames				.73	
Factor 5: Lyrics about science and science fiction					
- Sci-fi lyrics					.86
- Zombies or some other monsters	.41				.60
- Scientific exploration and/or outer space					.72
- Aliens					.80
- Lovecraftian themes and stories					.53

**Table 2.** Factor items & factor loading for lyrical preferences

respective factor loadings within each factor can be seen on Table 2. In instances where items loaded into more than one factor, the factor was placed within the most conceptually similar factor.



Lyrical Factor	Number of items	Cronbach's Alpha
Vulgar / Immoral	10	.84
Embracing Metal Culture/Fun	8	.76
Human Experience	6	.80
History/Myths/Nature	5	.77
Science and Science Fiction	5	.79

**Table 3.** Five factors representing lyrical subject preferences.

### 5.3. Results

Analyses were conducted to gain insight into the moral reasoning of metal fans. I aimed to establish: 1) the relationship between the type of metal fan and moral foundations; and 2) the extent to which moral foundations and personality traits explain lyrical preferences. The first relationship was explored using an ANOVA, and the second through a correlation to establish the relationships, and then through hierarchical regressions to clarify the direction of the relationship.

#### 5.3.1. The relationship between type of metal fan and moral foundations

An exploratory one-way ANOVA was run to determine if there were differences in moral reasoning between types of metal fans. Nine types of metal fans were explicitly compared (black metal, death metal, doom metal, grind/power violence, heavy metal, power metal, thrash, folk metal, progressive metal), with 314 participants for this analysis. See Table 4 for a full list of descriptive statistics. Homogeneity of variance was not violated for any of the five moral foundation factors. It was found that there were significant differences on the dimensions of authority/subversion,  $F(9,331) = 1.91$ ,  $p = .05$ ,  $\eta^2 = .04$ , and sanctity/degradation,  $F(9,331) = 2.94$ ,  $p = .002$ ,  $\eta^2 = .08$ , but not for care/harm, fairness, or group loyalty foundations. Metal fans had similar scores for care/harm ( $M = 19.13$ ,  $SD = 3.65$ ), fairness ( $M = 19.28$ ,  $SD = 3.17$ ), and group loyalty moral priorities ( $M = 12.62$ ,  $SD = 4.09$ ), regardless of their preferred metal subgenre. Bonferroni multiple comparisons tests were run to explore those differences, but likely due to the smaller sample sizes of fans

outside of black metal fans (N = 83) and death metal fans (N = 78), there was only a significant difference detected between those two groups on sanctity/degradation. It was found that black metal fans had significantly lower scores on sanctity/degradation moral foundation (M = 11.22, SD = 4.30) than death metal fans (M = 13.95, SD = 4.57),  $p = .007$ . This is consistent with the ideology and lyrical content of black metal, which is frequently anti-religious.

	Black	Death	Doom	Grind	Heavy	Power	Thrash	Folk	Prog
Care	18.57 (3.96)	19.63 (3.24)	20.05 (3.19)	19.07 (3.97)	18.36 (4.49)	19.41 (3.57)	18.35 (4.02)	19.46 (3.07)	19.08 (2.47)
Fairness	18.58 (3.45)	19.95 (2.84)	20.05 (2.14)	19.14 (2.82)	18.82 (3.87)	19.32 (3.98)	18.96 (2.99)	19.08 (2.78)	19.08 (3.58)
Group Loyalty	12.05 (4.14)	13.05 (4.05)	12.59 (3.92)	13.14 (5.08)	13.75 (4.42)	11.91 (4.22)	13.30 (2.72)	12.62 (4.44)	10.75 (3.60)
Authority	11.45 (4.43)	13.42 (4.44)	12.29 (3.91)	11.79 (5.55)	13.39 (4.49)	12.36 (5.19)	11.52 (4.12)	13.31 (4.77)	10.03 (3.94)
Sanctity	11.22 (4.30)	13.95 (4.57)	12.49 (4.56)	12.43 (4.36)	13.79 (4.52)	13.82 (4.71)	11.65 (4.99)	13.62 (3.88)	9.58 (5.28)

**Table 4.** Mean scores and standard deviations of nine types of metal fans across five moral domains.

### 5.3.2. Moral foundations and personality as explaining the variance in lyrical preferences

The five types of lyrical preferences were normally distributed across participants. Pearson correlations were run between the five lyrical factors, the five moral domains, and the five personality traits. The results of the correlations can be found in Table 5. Preferring lyrics about human experience correlated positively with the care/harm, fairness, and sanctity/degradation moral dimensions. Lyrics about embracing history, mythology, and nature only correlated with the group loyalty moral domain. A preference for science and & science fiction lyrics only correlated with the care/harm moral domain. Enjoying lyrics about embracing metal culture and having fun were positively correlated with the care/harm, group

loyalty, authority/subversion, and purity/sanctity moral domains. The only lyrical preference with a significant negative relationship was that between vulgar/immoral lyrics and the sanctity/degradation moral domain.

Variable	Factor	Lyrical Factor				
		Vulgar/Immoral	Embracing Metal Culture & Fun	Human Experience	History/Mythology/Nature	Science & Science Fiction
Moral reasoning	Care/harm	-0.09	.15**	.32***	0.06	.15**
	Fairness	-0.1	0.1	.22***	0.02	0.06
	Group loyalty	-0.04	.25***	0.04	.14**	-0.04
	Authority/Subv.	-0.1	.24***	0.02	0.04	-0.01
	Sanctity/Degrad.	-.23***	.18***	.13*	-0.01	-0.06
Personality style	Agreeableness	-.12*	.13*	.19**	0.07	0.02
	Conscientiousness	-0.05	0.07	0.03	-0.07	0.02
	Extraversion	0.063	.15**	-0.08	-0.04	0.01
	Neuroticism	0.09	0.06	.16**	.11*	0.1
	Openness	0.04	0.08	.12*	.13*	.18***

**Table 5.** Correlations between lyrical preferences with moral reasoning and personality factor. (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )

There were also significant associations found between lyrical preferences and personality traits. Agreeableness was negatively correlated with a preference for vulgar/immoral lyrics. Enjoying lyrics about embracing metal culture & fun was positively associated with agreeableness and extraversion. Preferring lyrics about the human experience was positively related to agreeableness, neuroticism, and openness to experience. Enjoying lyrics about history, mythology, and nature was positively associated with neuroticism and openness. Enjoying lyrics about science and science fiction was only associated with higher levels of openness to experience.

It was predicted that moral reasoning styles and personality types might predict and explain some of the variance in lyrical preferences, thus a series of five hierarchical multiple regression analyses were performed using the five moral foundations to predict variability in lyrical preferences. A two stage hierarchical multiple regression was conducted with a lyrical preference factor serving as the dependent variable in each analysis. Personality variables were used as predictors in stage one, as personality types had previously been established as playing a role in media preferences (Chory & Goodboy, 2011; Krcmar & Kean, 2005). Moral reasoning styles were entered at stage two. A summary of the results can be found in Tables 6a and 6b.

The hierarchical multiple regression revealed that at Stage one, personality traits did not contribute significantly to the preference for vulgar/immoral lyrics regression model,  $F(5,335) = 2.01, p = .08$ . However, introducing the moral reasoning styles explained an additional 5.6% of variation in preferring vulgar/immoral lyrics and the change in  $R^2$  was significant,  $F(10,330) = 60.10, p = .001$ . For preferring lyrics that embraced metal culture and fun, Stage one of the analysis revealed that 4.8% of the variance was explained by personality traits,  $F(5,335) = 4.43, p = .001$ . The addition of moral reasoning styles accounted for 12.2% of the variance in enjoying lyrics about metal culture and fun,  $F(10, 330) = 5.73, p < .001$ . For lyrics about the human experience, 8.9% of the variance was accounted for by personality traits,  $F(5, 335) = 7.65, p < .001$ , whereas 14.1% was accounted for when combined with moral reasoning styles,  $(10, 330) = 6.56, p < .001$ . At Stage one for preferring lyrics about history, mythology, and nature, personality traits explained 2.8% of the variance,  $F(5,335) = 2.98, p = .01$ , and with Stage two, the combination with moral reasoning styles explained 5.5%,  $F(10, 330) = 2.98, p = .001$ . Lastly, 3.2% of the variance in enjoying lyrics about science & science fiction was explained by personality traits,  $F(5, 335) = 3.22, p = .008$ , and with moral reasoning styles 6.7% of the variance was accounted for,  $F(10, 330) =$

Regression 1: Preference for vulgar/immoral lyrics						
Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 1				0.171	0.029	0.029
Agreeableness	-0.106	-1.900	0.010			
Conscientiousness	-0.025	-0.423	0.001			
Extraversion	0.103	1.754	0.009			
Neuroticism	0.088	1.754	0.009			
Openness	0.031	0.559	0.001			
Step 2				0.290	0.084	0.055
Care	-0.034	-0.497	0.001			
Fairness	-0.03	-0.461	0.001			
Group Loyalty	0.068	0.982	0.003			
Authority	0.035	0.456	0.001			
Purity	-0.259***	3.848	0.041			
Regression 2: Preference for lyrics that embrace metal culture & fun						
Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 1				0.249	0.062	0.062
Agreeableness	.137*	2.494	0.017			
Conscientiousness	.067	1.162	0.004			
Extraversion	.179**	3.090	0.027			
Neuroticism	.185**	3.040	0.026			
Openness	.025	0.454	0.001			
Step 2				0.385	0.148	0.086
Care	.073	1.107	0.003			
Fairness	.037	1.107	0.001			
Group Loyalty	.155*	2.313	0.014			
Authority	.151*	2.029	0.011			
Purity	.008	0.116	0.000			
Regression 3: Preference for lyrics about the human experience						
Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 1				0.320	0.103	0.103
Agreeableness	.228***	4.246	0.048			
Conscientiousness	.076	1.334	0.005			
Extraversion	-.064	-1.135	0.003			
Neuroticism	.230***	3.876	0.040			
Openness	.113*	2.116	0.012			

**Table 6a.** Summary of hierarchical regression analyses for variables predicting lyrical preferences (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )

Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 2				0.407	0.166	0.063
Care	.193**	2.956	0.022			
Fairness	.057	0.917	0.002			
Group Loyalty	.057	0.858	0.002			
Authority	-.051	-0.694	0.001			
Purity	.094	1.456	0.005			
Regression 4: Preference for lyrics embracing history, mythology, & nature						
Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 1				.206	0.043	0.043
Agreeableness	.098	1.772	0.009			
Conscientiousness	-.062	-1.061	0.003			
Extraversion	-.026	-0.448	0.001			
Neuroticism	.107	1.741	0.009			
Openness	.142*	2.571	0.019			
Step 2				.288	0.083	0.040
Care	.017	0.254	0.000			
Fairness	-.037	-0.570	0.001			
Group Loyalty	.239***	3.425	0.033			
Authority	-.022	-0.281	0.000			
Purity	-.084	-1.251	0.004			
Regression 5: Preference for lyrics about science & science fiction						
Variable	B	<i>t</i>	sr <sup>2</sup>	<i>R</i>	<i>R</i> <sup>2</sup>	Δ <i>R</i> <sup>2</sup>
Step 1				.214	0.046	0.046
Agreeableness	.027	0.481	0.001			
Conscientiousness	.034	0.573	0.001			
Extraversion	.012	0.210	0.000			
Neuroticism	.132*	2.146	0.013			
Openness	.175**	3.172	0.029			
Step 2				.259	0.067	0.021
Care	.150*	2.173	0.013			
Fairness	-.014	-0.221	0.000			
Group Loyalty	-.037	-0.531	0.001			
Authority	.105	1.357	0.005			
Purity	-.103	-1.522	0.007			

**Table 6b.** Summary of hierarchical regression analyses for variables predicting lyrical preferences (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )

2.38,  $p = .01$ . Overall, the personality trait of Openness was the one that played a significant role in predicting more types of lyrical preference.

#### 5.4. Discussion

This study examined the association between lyrical preferences, moral reasoning domains, and personality traits. I first developed a lyrical preferences scale that allowed for comparisons between members of the metal music community. Then I identified differences about moral reasoning based on the type of metal preference (e.g., black metal fans had the lowest scores on the sanctity/degradation moral foundation), and further analyses revealed a rather nuanced understanding about how lyrical preferences are related to moral foundations.

Correlations showed that enjoying lyrics about depression, hardships, love, and emotional turmoil (i.e. human experience) are related to having higher scores on the care/harm and fairness moral domains, which suggests that those people who prefer these lyrics might find the struggles of others related to their own hardships, and might be more empathetic to those struggles. Individuals who showed a preference for vulgar lyrics, such as misogyny, violence, and Satanism in their lyrical content, have significantly lower scores on the sanctity/degradation moral domain compared to other metal members. One possible explanation is that these metal music members have a different understanding of sanctity (e.g., thinking of the body as a temple), which is materialised in how these music members with vulgar/immoral lyrical preferences have higher levels of extreme and unusual piercings and body modifications than metal members with other lyrical preferences (something we recorded in this study, but was not a focus of the analysis). It is also possible that those who prefer more disgusting lyrics are approaching the idea of disgust in a fundamentally different way than most other music and metal music fans. Adding further cause for concern, the sanctity/degradation subscale has recently been questioned for how inconsistently it applies to people who are not religious (Davis, Dooley, Hook, Choe, & McElroy, 2017), which is

primarily the case for metal fans in the current sample, as most participants identified themselves as atheistic, agnostic, or 'none.' This moral domain has been further criticized, as it has been claimed that 'purity' is a descriptive label, and does not reflect a form of moral processing (Gray & Keeney, 2015). Future research could explore the relationship between the sanctity of the body and the self for metal fans, particularly for those that prefer immoral/vulgar lyrics.

A preference for lyrics about embracing metal culture & fun, which include themes like unification and loyalty, was associated with higher scores on the moral domains for authority/subversion, group loyalty, care/harm, and sanctity/degradation. It is expected that lyrics about loyalty would be associated with higher levels of loyalty as a moral foundation, which would extend into the authority moral domain, since this shows an appreciation of leadership and followership, as well as a respect for traditions. These lyrics celebrate metal culture, which might extend to a more formal view of metal culture, via respect for traditions, loyalty to the metal community, increased levels of caring, and more common views on purity compared to those who prefer vulgar/immoral lyrics and more extreme metal subgenres. This is a direction that future research could further explore. Lyrics about honour and pride include sentiments that fit well into a worldview that has structure and respect for that structure.

A preference for lyrics about history, mythology, and nature, which include lyrics about war, patriotism, and martyrdom, was positively associated with the group loyalty moral foundation. This association is reasonable, as lyrics about war can emphasize themes such as loyalty to a nation, regime, or historical entity, so individuals who enjoy these are likely seek out lyrics about loyalty as this is a moral principle important to them.

Having a preference for lyrics about science and science fiction only had a relationship with the care/harm moral domain. These are likely lyrics that are more morally



neutral, which might explain the lack of an association with other moral domains. The association between science and science fiction lyrics and the moral foundation that focuses on empathy and struggle is not an intuitive one, so future research could explore this relationship by encompassing preferences for this sort of content in other forms of media, such as science fiction films.

Personality traits also had a relationship with lyrical preferences, including vulgar/immoral lyrical preferences negatively relating to agreeableness. People that enjoyed lyrics about embracing metal culture and fun had personality traits that reflected being more extraverted and agreeable, so this lyrical style that embraces activities with groups and friends is consistent with being outgoing, sympathetic, and trusting of others. Preferring lyrics about the human experience was positively related to being more agreeable, neurotic, and open to experience, showing that choosing to listen to emotional lyrics about human experiences is often consistent with having a personality associated with feelings like anxiety, depression, and loneliness. In other words, there was consistency between the lyrical subject matter and the emotional experiences of the person. Similarly, choosing to listen to lyrics about history, nature, and mythology was associated with higher levels of neuroticism and openness to experience. Lastly, enjoying lyrics about science & science fiction were only related to higher levels of openness to experience. Openness to experience is likely associated with lyrics about history and science fiction because these are lyrical topics that describe experiences that might be far from the user's everyday experiences, indicating a preference towards lyrics that have interesting and often unfamiliar narratives that satiates their openness and desire for new experiences.

These relationships were given further clarification by investigating the extent to which moral reasoning and personality traits explained lyrical preferences. It was found that moral foundations do explain a unique and significant portion of the variance in lyrical

preferences that was not already accounted for by personality traits. For example, preferring lyrics about human struggle was related to the moral foundation for care in addition to higher levels of neuroticism and agreeableness. In this instance, an individual that has higher levels of care and empathy involved in how they morally reason might also prefer lyrics about human emotions and struggles that similarly use their ability to be empathetic, since some of their personality traits (neuroticism) suggest that a tendency towards emotional instability.

In relation to the insights from moral panic theory, this study clarifies the direction between moral reasoning and lyrical preferences adding support to the hypothesis that lyrical preference reflect pre-existing moral foundations and personality traits, rather than lyrics leading to a ‘corruption’ of morality. This is consistent with previous findings showing that those who perform acts of violence seek out lyrics that justify their pre-existing beliefs about violence (Kiilakoski & Oksanen, 2011).

This study has also brought insights to the metal studies literature, showing that adhering to a metal subgenre has significant implication. For example, black metal fans had lower levels in the sanctity/purity moral domain, which is consistent with the frequently anti-religious message of black metal culture (Cordero, 2009).

A few limitations should be noted. First, the moral foundations subscales had slightly lower internal reliabilities than anticipated. It is worth noting that recently, Moral Foundations Theory (MFT) has been criticized for how difficult it is to replicate across cultures (Inurino & Saucier, 2018). These limitations might extend into metal culture, in which case MFT might not be the ideal way to explore the moral reasoning of people within metal music culture. Further, the lyrical factor scale developed here comes with its own limitations. It is not expected that the factors presented would be universal across every music culture since lyrical themes and meanings vary across cultural contexts. Although the different types of lyrics could be used in the study of other music cultures, it is likely that the

factor structure of the scale would be different. For instance, gang-related activities fall under the vulgar/immoral factor for metal fans, but they might not fall into the same factor in hip hop music, since lyrical topics like Satanism (also part of the vulgar/immoral factor) probably don't appeal to the same types of hip hop fans as gang-related lyrics. A future study could investigate the degree to which lyrics are interpreted as entertaining, relational, or as a statement of endorsement towards a certain perspective (e.g., pro-violence). This meaning-making approach to lyrics would allow for understanding the role and functions of lyrical preferences, with some functional possibilities including escapism, coping, or feeling like someone else understands a user's emotional turmoil. Other future studies could evaluate how behaviour directly relates to moral reasoning and media preferences, since it is known that moral foundations don't always correlate with moral behaviours (Graham, Meindl, Beall, Johnson, & Zhang, 2016). Whereas it is the case that violent media, such as video games (Beerthuisen, Weijters, & van der Laan, 2017; Markey, Markey, & French, 2015), can reduce violent behaviours, a future study could see if listening to music with violent lyrical themes serves a similar function.

This study, which explored the relationship between lyrical preferences, moral preferences and personality traits will hopefully add more nuance to the discussion of types of music and their association with moral and immoral behaviours. We suggest that lyrical preferences might originate in pre-existing characteristics, including moral reasoning styles and personality traits. This evidence can be added to that of other precursors for media preferences, including emotional vulnerability/reliability (Baker & Bor, 2008), personality factors (Chory & Goodboy, 2011; Krcmar & Kean, 2005), and pre-existing ideology (Kiilakoski & Oksanen, 2011). Given this, it is hoped that future associations between media (not limited to metal music), and behaviour will take into account these psychological factors,

since there is now evidence that moral orientation is as similarly fundamental as personality traits in predicting media preferences.

## Chapter 6: The effects of music within a secular sacred worldview

### 6.1. Introduction

The metal worldview is identified largely by a common love for heavy metal music, so this study will explore the sacred experiences associated with their music. The goal was to test whether listening to metal music that is perceived as sacred would lead to higher levels of affect, prosocial behaviour, empathy, and the general fulfilment of psychological needs compared to listening to music that is perceived as enjoyable — but not sacred. The focus of this study was on a specific subset of the metal worldview: members of the death metal community. Death metal members were selected because, based on the sampling technique used in the first study, they were one of the most numerous subgroups.

Death metal music is characterized by vocalizations with unnaturally low fundamental frequencies, high levels of distortion, and little to no harmonic structure. Vocally, the linguistic content can be difficult to discern as the vocal approach can be perceived as growling, screaming, and/or other non-linguistic vocalizations that are frequently associated with aggression and fear (Olsen, Thompson, & Giblin, 2018). The most popular death metal band is Cannibal Corpse, who have sold millions of albums worldwide, and have had multiple albums make it on to the top 40 American Billboard charts, including albums with the names “Kill” and “Torture.” Arguably their most popular song is “Hammer Smashed Face,” which they can be seen performing in the popular 1994 blockbuster comedy *Ace Ventura: Pet Detective*, which stars Jim Carrey. The band appeared in the film at Carrey’s request, who had, at the time, identified himself as a fan of death and thrash metal (Mudrian, 2009). The aforementioned song was one that was anticipated to be important, or even sacred, to many death metal members, so it was one included as a stimulus in this study. Even if the song is not important to the individual death metal member, it is unquestionably important to death metal’s history due to the public exposure that it received in popular

media. To narrow the scope of what is considered sacred in the study, it was decided that popular (potentially sacred) death metal songs would be compared to the most popular non-metal songs that are still considered enjoyable by metal members. Music preference is important to control for in music studies, and in the particular case of death metal, it has been found that members and non-members have different experiences when listening to death metal music (Thompson, Greeves, & Olsen, 2018), so only self-identified death metal members were recruited for the study.

### 6.1.1. The sanctity of music

Sacred music can inspire feelings of awe (Goldman, 2009), and may act as a cue for moral behaviour (Lang et al., 2016). Although past research has not examined metal music for its potentially sacred qualities, metal music has been associated with spiritual experiences that would be consistent with the sacred (Coggins, 2016). Based on how important metal music is to its members, and that metal music has previously been associated with feelings of transcendence, this study explored the effects, functions, and affective experience of secular sacred music.

### 6.1.2. Music, empathy, and prosociality

Positive affect and empathy are psychological needs that can be fulfilled, but the relationship that empathy has with music is unclear. Although there is a long history of research connecting music and empathy, it is plagued by conceptual variance across a wide range of vaguely defined phenomena (Clarke, DeNora, & Vuoskoski, 2015). Overall, there is evidence that music can help regulate emotions, promote empathy (Greenberg, Rentfrow, & Baron-Cohen, 2015), and reduce the stereotyping of outgroups (Sousa, Neto, & Mullet, 2005), but the relationship between music and empathy is largely dependent on music preferences (Clark & Giacomantonio, 2013). The act of playing music with others has been associated with empathy as well, even among children (Rabinowitch, Cross, & Burnard,

2013). As for prosociality, music has been found to help increase prosocial attitudes in the form of in-group favouritism (Bakagiannis & Tarrant, 2006; Lonsdale & North, 2009), and strengthen prosocial effects towards other community members if they move synchronously with the beat of the music (Stupacher, Maes, Witte, & Wood, 2017). A relationship was detected between prosociality and music in other specific instances, such as when the music has prosocial lyrics (Ruth, 2017; Greitemeyer, 2011; Greitemeyer, 2009; Jacob, Guéguen, & Boulbry, 2010) or when music making is a joint effort (Kirschner & Tomasello, 2010; Schellenberg, Corrigan, Dys, & Malti, 2015). Music has previously been investigated as a therapy to increase prosociality, but with mixed results (Parra, 2009).

### 6.1.3. Music and the fulfilment of psychological needs

Outside of empathy, music has been associated with higher levels of fulfilment of other psychological needs, including the regulation of arousal and mood, self-awareness, and as an expression of social relatedness (Schäfer, Sedlmeier, Städtler, & Huron, 2013). The role of music in fulfilling psychological needs seems especially important for adolescents, as they are often engaging music more frequently and with more devotion than other age groups, and their use of music coincides with their learning of self-regulation, emotional autonomy, and control over their own lives. For adolescents, the fulfilment of psychological needs through music has been categorized into four domains: interpersonal relationships, identity, agency, and emotions (Laiho, 2004). The interpersonal relationship category is about cultural identification, maintaining unity and relationships, and feeling a sense of belonging. The identity domain is about conceptualizing the self and forming an identity. Agency is about self-determination, resisting authority, and motivating one's self to achieve goals and to master them. Lastly, the emotional field is about sensation, mood maintenance, experiencing joy, coping with stress, and motivating one's self. Although Laiho's division of functions is different than what was used in Schäfer's work, there is an overlap in the concepts.

Regulating arousal and mood is consistent with the emotional domain, achieving self-awareness is consistent with the identity domain, and expressions of social relatedness fall into the interpersonal relationships domain. In the current study, I used an adapted version of the scale developed by Schäfer, Sedlmeier, Städtler, & Huron (2013), which was used to measure these three areas of psychological need fulfilment. I compared the extent to which they are fulfilled in association with secular sacred music when compared to simply enjoyable music.

#### 6.1.4. Psychological needs & prosociality

Each of the three psychological needs dimensions described by Schäfer, Sedlmeier, Städtler, & Huron (2013) have been found to have a positive relationship with prosociality, adding further value to the inclusion of prosociality measures in this study. Positive mood can result in prosocial behaviour (George, 1991). Arousal has been associated with prosocial social values, such as the arousal from seeing awe-inspiring aspects of nature (Joye & Bolderdijk, 2015). Self-awareness in the form of prosocial self-schemas has also been associated with prosocial behaviour (Froming, Nasby & McManus, 1998). General public self-awareness has been found to be a moderator between the watching eyes phenomena (acting more prosocially when others are watching) and prosocial behaviour (Pfattheicher & Keller, 2015). Lastly, relatedness has been associated with increased prosocial behaviour (Pavey, Greitemeyer, & Sparks, 2011).

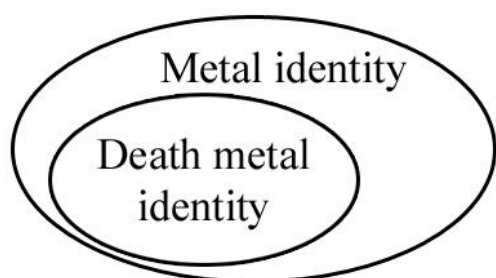
#### 6.1.5. Distinguishing enjoyable music from sacred music

Listening to preferred music can have more intense effects than non-preferred music (Fukui & Toyoshima, 2014), so this study focused on a specific subgenre of metal members and used their own preferred subgenre of music as a stimulus. It would be easy but not very informative to establish a difference between the effects of secular sacred music and general music. My aim was to identify what separates sacred music from other music that people



enjoy, with the assumption that sacred music is perceived at an experiential level of intensity above that of merely enjoyable music. Hard rock is rated as the most enjoyable non-metal genre of music for metal fans (Guibert & Guibert, 2016), so the songs that were perceived as most important to death metal fans (as concluded from a pilot study) were compared to popular hard rock songs. Hard rock is enjoyable to most metal members, but it is disparate enough to not have as much overlap for a death metal member's identity and perceived sacredness as different subgenres of metal. There hasn't yet been a study to establish differences between sacred music and enjoyable music within a single worldview, so the current study is novel.

There has been one study comparing secular and sacred music (Lowis & Hughes, 1997), but it presented a number of conceptual and methodological limitations. Sacred music



Death metal identity has overlap with metal identity, so hard rock was chosen as a comparison stimulus to avoid the risk of both musical stimuli being sacred to the self.

was defined as music that the listener identified as being intended for religious purposes, whereas secular music was interpreted as being for nonreligious purposes.

The authors had participants listen to a series of music samples in an order that was

intentional and deliberate, lining up with what the researchers intended participants to experience, instead of randomizing the order of the passages. Contrary to this study, my study identified the sacred in two ways: through perceived sacredness to the self and through perceived sacredness to the death metal community.

#### 6.1.6. Hypotheses

It was predicted that death metal songs would fulfil higher levels of psychological needs than hard rock songs. Further, it was expected that death metal songs would generate more positive affect than hard rock songs. It was explored whether death metal music that is

deemed as sacred by metal members would lead to higher prosocial behavioural intention than hard rock music. Finally, both non-sacred music (Greenberg, Rentfrow, & Baron-Cohen, 2015) and the sacred have been associated with empathy (Ellison, Henderson, Glenn, & Harkrider, 2011), so I also tested if music perceived as sacred music would result in higher levels of empathy than non-sacred music.

## 6.2. Method

### 6.2.1. Participant recruitment

Participants volunteered to participate in response to study advertisements posted in death metal themed groups on social networking websites. Eighty-nine participants completed the study and were used in the analyses. 83.1% of the sample identified as male, 14.6% identified as female, and the remaining two individuals (2.2%) identified as non-binary. Mean age was 33 (Range: 17-64, SD = 9.14). Most participants were White/Caucasian (82%), followed by Latino (7.9%), Asian (5.6%), or other (4.5%). The ‘other’ category was primarily composed of people that chose not to disclose or categorize their ethnicity. Most participants were from the United States (47.2%), the United Kingdom (25.8%), Canada (4.5%), Germany (3.4%), or dispersed among other countries, including Australia, China, Czech Republic, Colombia, Denmark, Finland, France, Greece, Norway, Peru, Portugal, Sweden, and the Netherlands. Most were single and never married (55.1%), many were married or living as (42.7%), and the remaining two individuals were separated or divorced (2.2%). Most participants identified their religious affiliation as being ‘none’ (34.8%), atheist (29.2%), or agnostic (15.7%). Following these, some identified as pagan (4%), Christian (3.4%), and the rest fell into the ‘other’ category, which included Buddhism, Wicca, Judaism, Hinduism, and Satanism. Education level varied greatly, with participants encompassing the full spectrum of education levels, from less than a high school degree (2.2%) to having a doctorate (3.4%). Most participants had a Bachelor’s degree (34.8%), had

attended some college (24.7%), completed high school (13.5%), or completed a Master's degree (11.2%). The rest had obtained an Associate's degree (6.7%) or other post-college degree (3.4%).

### 6.2.2. Overview of study procedures

The study's hypotheses were pre-registered using Open Science Framework (DOI: 10.17605/OSF.IO/UYZCQ). An online questionnaire was distributed through social networking groups that had a focus on death metal music and discussion. Participation was voluntary. The online survey included measures of affect, empathy, prosocial behaviour intention, and psychological needs fulfilment. Participants listened to a series of eight music clips in two blocks of four. One of the blocks consisted of death metal songs, and the other of popular hard rock songs. The order of the four songs in each block was randomised, and the order of the two blocks was also randomised. All participants listened to eight music clips. The block structure allowed for some measures to be filled out after each block, rather than after each song, in order to keep the duration of the survey at an acceptable length. Participants responded to measures of affect, sacredness to the self, and sacredness to the death metal community after listening to each song clip. The averages of the scores were taken from the responses to each block of clips and were used within the analyses. After each block, participants responded to measures of empathy, prosocial intentions, and psychological needs fulfilment in response to the previous four songs. At the end of the survey participants filled out a series of demographic questions.

### 6.2.3. Overview of study measures and statistical analysis

Scales were selected based on their length and validity. This study was not funded nor paid participants, thus it was important to keep the length of scales as short as possible to keep the completion rates of the survey high. The independent variables (type of song, affect, prosocial intentions, the fulfilment of psychological needs, and empathy) were used to

explain differences in two dependent variables (sanctity of the song to the self; sanctity of the music to the death metal community) using a repeated measures ANOVA.

#### *6.2.3.1. Song selection*

Participants listened to a series of eight music clips, which were divided into two blocks of four. The order of the four songs was randomized for every participant. Only 30 distinctive seconds of each song were played for participants. One block of music was composed of prominent death metal songs (Cannibal Corpse – Hammered Smashed Face, Morbid Angel – Chapel of Ghouls, Suffocation – Liege of Inveracity, Death – Pull the Plug). The second block was made up of popular hard rock songs (ACDC – Back in Black, Guns N Roses – Welcome to the Jungle, Queen – Bohemian Rhapsody, Twisted Sister – I Wanna Rock). After each song clip, participants were asked their familiarity with the song as a manipulation check.

#### *6.2.3.2. Sacred to the self and the community*

Two measures were developed to identify to what extent each song was considered sacred. One measured how sacred they were to the self ( $\alpha=.92$ , e.g. To what extent do you feel that this song is important to you?), and the other how sacred they were perceived to be for the death metal community ( $\alpha = .94$ , e.g., To what extent would you expect other death metal fans to find this song to be very special?). The aim was to control for the more individualized nature of music taste, while keeping in mind that the songs could be very important to the death metal community as a whole.

#### *6.2.3.3. Affective measures*

The shortened PANAS (Positive & Negative Affect Schedule) was used to measure the affective response to each song clip (e.g., to what extent does this song clip make you feel cheerful; Ebesutani, Regan, Smith, Reise, Higa-McMillan, & Chorpita, 2012). The measure

of positive affect had strong reliability ( $\alpha = .92$ ) but negative affect was less reliable ( $\alpha = .52$ ), likely because neither type of music generated negative affective response.

#### *6.2.3.4. Prosocial and empathy measures*

Two types of prosocial behavioural intention were measured using the Prosocial Behavioural Intentions Scale (e.g., to what extent would you comfort someone you know after they experience a hardship; Baumsteiger & Siegel, 2018), and the Social Generativity Scale (e.g., I feel that I ought to carry out activities in order to ensure a better world for future generations; Morselli & Passini, 2015). The prosocial behaviour intention ( $\alpha = .83$ ) and social generativity scales ( $\alpha = .92$ ) had strong internal reliability scores.

Empathy was measured after each block using the eight-item version of the Empathy Quotient (e.g., I find it easy to put myself in somebody else's shoes; Loewen, Lyle, & Nachshen, 2009). The shortened Empathy Quotient was selected due to its wide application in the literature and for its short length. The empathy quotient had moderate internal reliability ( $\alpha = .69$ )

#### *6.2.3.5. Psychological needs from music*

After each block of four clips, participants filled out an adapted version of the psychological needs fulfilled by music scale in response to the previous four music clips and others like them (Schäfer, Sedlmeier, Städtler, & Huron, 2013). The scale was shortened to six items for each of the three dimensions, and the wording of the original English translations were altered to improve clarity. The psychological needs fulfilment subscales had satisfactory reliabilities (mood maintenance,  $\alpha = .86$ ; self-awareness,  $\alpha = .89$ ; social relatedness,  $\alpha = .91$ ). The three types of psychological functions are consistent with the mental and emotional well-being, self-enhancement, and socially-driven psychological needs outlined in chapter two.

### 6.3. Results

A Pearson correlation was run prior to hypothesis testing to determine the relationship between the variables. The result can be found in Table 1. A one-way repeated measures ANOVA was run with two levels of a single independent variable (type of music: death metal or rock) and ten dependent variables (perceived sanctity to the self, perceived sanctity to the death metal community, positive affect, negative affect, prosocial behavioural intention, social generativity, self-awareness, social relatedness, mood maintenance, and feelings of empathy). The compared scores and the p value for their differences can be found in Table 2.

There was a significant effect of the type of music on the dependent variables, Wilks' Lambda = .13,  $F(10,79) = 53.24$ ,  $p < .001$ ,  $\eta^2 = .871$ . The observed power was 1.00. Each difference is explored in the sections that follow. A Bonferroni correction was applied due to the use of multiple comparisons (ten comparisons, adjusted  $\alpha = .05/10 = .005$ ).

Item	Mean & SD for death metal	Mean & SD for hard rock	P value of difference
Sacred to the self	3.06 (0.97)	2.10 (0.60)	< .001
Sacred to the community	3.99 (0.70)	2.06 (0.61)	< .001
Positive Affect	3.53 (0.79)	2.84 (0.80)	< .001
Negative Affect	1.10 (0.19)	1.14 (0.26)	.108
Prosocial Intentionality	4.41 (0.65)	4.25 (0.76)	.001
Social Generativity	3.38 (1.02)	3.06 (1.04)	< .001
Self-Awareness	3.57 (0.98)	2.11 (1.01)	< .001
Social Relatedness	3.72 (1.05)	2.52 (1.11)	< .001
Mood Maintenance	4.29 (0.70)	2.91 (1.17)	< .001
Empathy	3.71 (0.64)	3.70 (0.65)	.84

Table 2: Descriptive statistics for perceptions and affective reactions to death metal versus hard rock

#### 6.3.1. Sanctity to the self and the community

As expected, the popular death metal songs were perceived as more sacred to the self ( $M = 3.06$ ) and to the death metal community ( $M = 3.99$ ) than popular hard rock songs ( $M = 2.10$  for the self,  $M = 2.07$  for the community). As would be expected due to the

	posaffect (DM)	negaffect (DM)	posaffect (R)	negaffect (R)	mood (DM)	selfaware (DM)	relatedness (DM)	mood (R)	selfaware (R)	relatedness (R)	empathy (DM)	empathy (R)	prosocial (DM)	prosocial (R)	generativity (DM)	generativity (R)	sacredself (DM)	sacredcomm (DM)	sacredself (R)	sacredcomm (R)	
posaffect (DM)			*																		
negaffect (DM)	-.03																				
posaffect (R)	.36**	.19																			
negaffect (R)	.01	.24*	-.34**																		
mood (DM)	.56**	-.17	.04	.05																	
selfaware (DM)	.57**	.14	.13	.06	.60**																
relatedness (DM)	.46**	.01	.34**	-.01	.59**	.55**															
mood (R)	.19	-.05	.66**	-.29**	.13	.03	.35**														
selfaware (R)	.22*	.04	.57**	-.20	.14	.26*	.36**	.74**													
relatedness (R)	.28**	-.02	.61**	-.19	.16	.19	.45**	.78**	.85**												
empathy (DM)	-.13	-.07	.00	-.10	-.17	-.05	-.03	.22*	.05	.03											
empathy (R)	-.19	-.13	.05	-.17	-.20	-.11	-.04	.24*	.05	.03	.92**										
prosocial (DM)	.05	-.03	.08	-.08	.19	.213*	.17	.15	.17	.14	.21	.21									
prosocial (R)	-.04	-.06	.18	-.10	.13	.10	.14	.24*	.23*	.20	.16	.17	.82**								
generativity (DM)	.34**	.05	.25*	-.08	.29**	.49**	.32**	.32**	.38**	.31**	.25*	.27*	.42**	.28**							
generativity (R)	.17	.05	.29**	-.13	.13	.37**	.24*	.35**	.41**	.31**	.28**	.33**	.44**	.39**	.84**						
sacredself (DM)	.75**	.01	.05	.02	.50**	.53**	.32**	.05	.09	.12	-.08	-.18	.06	-.09	.24*	.09					
sacredcomm (DM)	.55**	.10	.14	.01	.42**	.31**	.24*	.11	.11	.13	-.02	-.13	.11	.07	.15	.06	.77**				
sacredself (R)	.23*	.14	.81**	-.23*	.03	.09	.25*	.64**	.62**	.60**	-.05	.04	.01	.11	.19	.21*	.06	.12			
sacredcomm (R)	.08	-.05	.47**	-.12	.04	.01	.15	.53**	.59**	.57**	-.02	.02	.22*	.24*	.24*	.31**	-.05	.06	.61**		

Table 1. Correlations between four types of metal behaviours, two types of metal commitment, salience in metal commitment, and metal identity  
 \*\* Significant at the .01 level \* Significant at the .05 level

individualized nature of musical preferences and experiences, the popular death metal songs were rated as more sacred to the community than sacred to the self. Tests of within-subjects contrasts revealed that listening to popular death metal music, when compared to listening to popular hard rock music, had significantly higher levels of perceived sanctity to the self,  $F(1,88) = 64.89, p < .001, \eta^2 = .424$ , and perceived sanctity to the death metal community  $F(1,88) = 409.50, p < .001, \eta^2 = .823$ . Both had an observed power for both was 1.00, indicating that the likelihood of Type 1 error occurring as highly improbable.

### 6.3.2. Affective results

Consistent with the hypotheses, the death metal songs ( $M = 3.53$ ) generated significantly higher levels of positive affect than the hard rock songs ( $M = 2.84$ ),  $F(1,88) = 52.55, p < .001, \eta^2 = .374$ . The type of music had no significant effect on the experience of negative affect,  $F(1,88) = 2.64, p = .11$ . Both enjoyable songs ( $M = 1.14$ ) and sacred songs ( $M = 1.10$ ) generated similarly low levels of negative affect. The observed power for positive affect was 1.00, whereas the power for negative affect was .36, further communicating the ineffectiveness of measuring negative affect when comparing enjoyable music to potentially sacred music.

### 6.3.3. Prosociality and empathy results

Both forms of prosocial intentions were higher in response to death metal music when compared to hard rock music. There was significantly higher prosocial behavioural intention,  $F(1,88) = 11.62, p = .001, \eta^2 = .117$ , with death metal ( $M = 4.41$ ) instead of rock ( $M = 4.25$ ). Participants were also significantly more likely to have the intention to help future generations after listening to death metal ( $M = 3.38$ ) rather than hard rock music ( $M = 3.06$ ),  $F(1,88) = 25.48, \eta^2 = .225, p < .001$ . Participants reported similar levels of empathy after listening to death metal ( $M = 3.71$ ) and hard rock songs (3.70),  $F(1,88) = .04, p = .84, \eta^2 = .000$ . The prosocial intentions comparison had an observed power of .92 and the social



generativity comparison had a power level of .999, showing that the probability for Type 1 error in both comparisons is very low. Empathy was more problematic, with an observed power of .06.

#### 6.3.4. Psychological needs results

Some of the largest differences between reactions to the two types of music were revealed when investigating the psychological needs fulfilled by music. Three types of psychological needs were explored. Fulfilment of the self-awareness psychological need was more frequent with death metal ( $M = 3.57$ ) than hard rock music ( $M = 2.11$ ),  $F(1,88) = 128.18$ ,  $p < .001$ ,  $\eta^2 = .593$ . The death metal songs were more frequently used for social relatedness ( $M = 3.72$ ) than hard rock songs ( $M = 2.52$ ),  $F(1,88) = 99.46$ ,  $p < .001$ ,  $\eta^2 = .531$ . Lastly, death metal was used for mood maintenance ( $M = 4.29$ ) more often than hard rock songs ( $M = 2.91$ ),  $F(1,88) = 100.88$ ,  $p < .001$ ,  $\eta^2 = .534$ . All three psychological needs from music contrasts had an observed power level of 1.00.

#### 6.3.5. Contributors towards the perception of sacredness

An exploratory standard multiple regression was employed to examine which of the variables in the study contributed towards perceiving music as sacred to the self. The regression model revealed that the eight predictors (positive affect, negative affect, prosocial intention, social generativity, empathy, mood maintenance, self-awareness, social relatedness) accounted for 56% of the shared variance in perceiving death metal music as sacred to the self (Adj.  $R^2 = .56$ ),  $F(8,80) = 15.15$ ;  $p < .001$ . The strongest predictor of the music being sacred to the self was positive affect ( $\beta = .69$ ,  $p < .001$ ). The remaining predictors did not significantly predict sacredness endorsement. The regression was repeated to see if similar would be found for the perceived sacredness of death metal music to the death metal community. It was found that 32% of the variance in sacredness to the community was explained by the eight variables (Adj.  $R^2 = .32$ ),  $F(8,80) = 6.16$ ,  $p < .001$ .

Positive affect ( $\beta = .54, p < .001$ ), negative affect ( $\beta = .20, p = .04$ ), and the ability to use music for mood maintenance ( $\beta = .33, p = .02$ ) were significant predictors of appraising death metal music as sacred to the death metal community. This outlines the crucial role of emotion in the appraising of the sacred, both to the self and to one's culture.

## 6.5. Discussion and conclusions

The results indicate that perceiving secular music as sacred, both to the self and to the community that the user is a member of, is associated with higher levels of psychological needs fulfilled compared to music that is appraised as enjoyable, but not sacred. Specifically, listening to death metal music was associated with higher levels of sacredness to the self, sacredness to the death metal community, positive affect, prosocial intentions and social generativity, self-awareness, social relatedness, and mood maintenance for death metal fans when compared to listening to hard rock music. The only variables that were tested that did not significantly differ when listening to death metal when compared to hard rock were negative affect and empathy. This provides evidence that death metal members are not only enjoying their preferred subgenre of music, but they're also connecting to it on a deeper level beyond enjoyment. This builds off of other literature that found that listening to a preferred style of music increases positive affect (Thompson, Greeves, & Olsen, 2018). Two regression analyses showed that emotion plays a critical role in appraising music as sacred, both to the self and to the metal community. Even though death metal music is characterized by violent lyrics and loud, abrasive instrumentation, it can allow for a sense of sacredness for death metal members that helps them to connect with others, helps with self-regulation, improves their mood, and helps them feel prosocial towards others and future generations. Further, these psychological needs are fulfilled at a level beyond music that is merely enjoyed. This study is the first evidence that the secular sacred is, like the religious sacred, a powerful resource that people use (Pargament & Mahoney, 2005a; Mahoney, Pargament, &

Hernandez, 2013).

One limitation of this study is the difficulty in studying sacred music to the self, since the perception of music as sacred is a very individualized experience. This was reinforced by the finding that the death metal songs were perceived as being more sacred to the death metal community than to the self. Participants were asked to list death metal songs that they felt were the most personally important to themselves as a manipulation check towards the four songs that were utilized, and the list of songs by each metal member had little overlap, even though all four of the songs used as stimuli in the study were regularly mentioned. Although this study chose some songs to use as a stimulus that fans would likely be familiar with, it would likely be the case that the sacred would play an even stronger role and lead to even higher levels of psychological function fulfilment if participants were able to choose the most important and sacred songs to themselves. In other words, instead of having participants identifying which song is more sacred from a set of two given choices, participants would likely react much more strongly if the selection of sacred music was more individualized, catering to the tastes of each individual member instead of averages across fans where there is little overlap. This study also relied heavily on self-report measures, which don't always correlate highly with behaviours (Prince et al., 2008) and implicit measures, which are similarly problematic (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). In particular, self-report measures of prosocial behaviour measures are prone to social desirability problems, but that would influence people in both musical conditions, so the difference between the two is likely still valid even if the scores are higher than they would be if actual behavioural or implicit measurements of prosociality were included.

These findings are novel because they fulfil two key goals of this thesis that are unique within the scientific study of the sacred: 1) the sacred has been identified as existing at an experiential tier above what is merely good or enjoyable, and 2) it has been found that the

secular sacred fulfils psychological needs within secular worldviews in ways that parallel how the religious sacred fulfils psychological needs for the religious. In addition to this, the study outlined the crucial role that emotion plays in sacred appraisals. This study explored and confirmed the positive aspects associated with the secular sacred, which builds towards the exploration of the negative aspects of the sacred, via loss and desecration, in the next study.

## Chapter 7: Loss and Desecration of the Secular Sacred

### 7.1. Introduction

As shown in the second chapter of this thesis, the sacred can be applied to a multitude of constructs, and many aspects of the metal worldview have the potential to be seen as sacred. The previous study (chapter 6) evaluated the extent to which music is considered sacred within metal, whereas this third study focuses on the potential sacredness of artefacts. The reasons for focusing on artefacts is that these take on a more tangible and objective shape than music, thus allowing to study the reverse side of the sacred: its potential negative effects when it's lost or violated.

As noted in the findings of the previous chapter, benefits occur from a sense of connection with a secular sacred worldview. Due to this connection with the sacred, when something happens that results in a loss, or even worse, a desecration of the sacred – it results in dramatic emotional turmoil for the user, that often manifests as anxiety, sadness, or anger, depending on the type of sacred loss (Pargament, Magyar, Benore, & Mahoney, 2005). Although the literature on sacred objects focuses on the religious sacred, it has been remarked that atheists also have the capacity to sanctify objects, as they too can imbue them with divine attributes (Pargament & Mahoney, 2005b). This has been called the secular sacred (Knott, 2013). The metal worldview has many of the qualities of a religious surrogate, and many of the characteristics consistent with the sacred, so this study goes a step further, and explores sacred loss and desecration in the context of this specific secular worldview.

The study described in chapter 6 found that popular and well-known death metal songs were rated as more sacred than other popular, non-death metal songs, but due to the sacred quality of songs being so individualized, the current study was designed so that participants could specifically describe and engage what is most sacred to them as

individuals. This third study investigated the consequences that occur when the secular sacred is lost or violated.

#### 7.1.1. Sacred Artefacts

This study investigated sacred objects among metal members by exploring the loss of those sacred objects in hypothetical ways that could be appraised as sacred losses or desecrations. Building on the work of Giles, Pietrzykowski, & Clark (2007) which identified metal artefact as having sacred qualities to their possessors, this study identified sacred metal artefacts and then examples of those artefacts were applied as experimental stimuli in sacred loss and desecration vignettes. The first study of this thesis identified the most common cultural artefacts owned by metal fans, which included clothing items, albums, and items that were signed by or belonged to musicians. Those findings were used to select which artefacts would be used as stimuli in this study.

#### 7.1.2. Sacred Loss & Desecration Appraisals

Pargament applied Lazarus' appraisal theory (1991; 1984) in the context of his own sanctification theory (Pargament, Magyar, Benore, & Mahoney, 2005; Pargament & Mahoney, 2005a). How people perceive or appraise an event is based on their knowledge and beliefs, which results in different emotional reactions with varying adaptative significance. Lazarus theorized that beliefs and culture help formulate culturally shared meaning about what is important, which applies directly into what can be considered sacred in a worldview, justifying emotional responses based on an assigned, culturally appropriate appraisal. In the context of sanctification theory, people suffer more severe consequences when they appraise loss as either sacred loss or a violation of the sacred.

### *7.1.2.1. Research on sacred loss & the violation of the sacred*

The violation of the sacred was first tested in the context of romantic relationships (Magyar, Pargament, & Mahoney, 2000), where it was found that participants who were hurt in the relationship that appraised the hurt or betrayal as a violation of a sacred relationship resulted in more negative affect and physical health symptoms, and poorer mental health. It wasn't until the Pargament, Magyar, Benore, & Mahoney study (2005) that appraising a negative event as a sacred loss was compared directly to appraising an event as a violation of the sacred. Participants were asked to identify the most negative life event that they had experienced within the previous two years. After that, they completed appraisal measures to determine if the negative life event was viewed as a sacred loss or a violation of the sacred. Neither appraisal was related to physical health, but both were tied to emotional distress and intrusive thoughts. Appraising the event as a sacred loss was associated with higher levels of depression, whereas appraising it as a violation of the sacred was associated with higher levels of anger.

Researchers were also able to measure posttraumatic growth, which is a measure of positive outcomes following a traumatic experience. They found that posttraumatic growth was higher for those with sacred loss appraisals than sacred violation appraisals. Put another way, appraising an event as a desecration can damage an individual's spirituality, where appraising it as a sacred loss can help strengthen it. Primarily, the research on sacred loss and violation has focused on major life events (Mahoney, Rye, & Pargament, 2005), such as divorce (Krumrei, Mahoney, & Pargament, 2011), and exclusively used appraisal measures. There is some evidence that sacred violation can hinder another aspect of a Christian worldview, forgiveness, as when a transgression is perceived as a desecration, then the transgressor is less likely to be forgiven (Davis et al., 2014; Mahoney, Rye, & Pargament, 2005). Past studies are limited because they focused only on the religious sacred, and the

scope of the stimuli were limited to events/transgressions. This study used similar methods by using appraisal measures, but it will expand the scope of sacred loss and violation outside of major life events, by looking at secular sacred artefacts, and then looking at how events can affect the relationship between the artefact and the individuals.

#### *7.1.2.2. Real-world applications of the violation of the sacred*

This theory has immediate real-world applications, for example, the ongoing sexual abuse scandals in the Catholic church have resulted in a decrease in church attendance and charitable giving (Bottan & Perez-Truglia, 2015) and an increase in conversions towards other religious faiths (Hungerman, 2011), which could be attributed to the violation of the sacred which is an interpreted outcome of those scandals because the Catholic faith and its ideology have been violated. With the increasing association between Catholicism and child sexual abuse, many Catholics have begun to question their own association with the Catholic Church. With the news of many of these criminal offenses, including by high ranking Catholic officials, it has desecrated the religion for many followers, severing the tie between the believer and their religion, or at least the institution that represents that religion. This does not mean that this has severed the sacred relationship between practicing Catholics and God, but rather, it severs the sacred relationship between practicing Catholics and the Catholic Church. This is why many Catholics are converting to other Christian faiths, to maintain a connection with God in a way where their faith, their religion, and their moral principles are not routinely violated. To give an example from a secular context, many view the flag of their nation (e.g., the American flag) as a sacred symbol of what their country represents. In the United States, there are rules for how a flag should be treated, and in some areas, those rules are federally mandated (Luckey, 2008). In times where the government has done something to desecrate values that citizens hold sacred, it is not unusual to see flags burned, altered, or painted over to push back against perceived corruption. In these instances, the connection that



a person felt for their country through their flag was severed by corrupt political acts. Similar sorts of events were applied in the vignettes of this study, which were meant to sever the perceived sacred bond between the metal member and the metal artefact that they appraised as sacred.

### 7.1.3. Internalized & Externalized Affective Reactions

When the sacred is lost or violated, it generates strong emotional reactions. In the case of this study, objects that could be perceived as sacred were the focus of analysis. Whether the sacred loss is appraised as a violation has previously resulted in distinct affective reactions (Pargament, Magyar, Benore, & Mahoney, 2005). More internalized responses, such as sadness and anxiety, will result from a loss of the sacred, but if the sacred has also been violated, then more externalized emotional responses are expected, like anger.

### 7.1.4. Artefacts with magical qualities

A common trait among sacred artefacts is a spiritual or magical quality, which is often referred to as a manifestation of God in religious contexts. Manifestation of God scales have been applied in the context of the sanctification of the body (Homan & Boyatzis, 2009; Mahoney et al., 2005a; Mahoney et al., 1999), learning (Phillips & Kitchens, 2016), strivings (Mahoney et al., 2005b), parenting (Weyand, O’Laughlin, & Bennett; 2013), and marital sexuality (Hernandez, Mahoney, & Pargament), among others. Although none of the manifestation of God scales focus on the sacredness of material objects, there is evidence – even for secular objects – that people believe that objects can be imbued with special qualities. People often believe, in a magical thinking way (i.e., contagion), that qualities can be transferred from one’s corporeal self to an object (Nemeroff & Rozin, 1994). As an example, people are less likely to buy a shirt that they know has been tried on by a stranger than a shirt that hasn’t been touched by another person (Argo, Dahl, & Morales, 2006). Similarly, a record collection can be seen as an extension of the self, and one that shares the

glory of the music between the owner of the collection and the artist that composed the music (Giles, Pietrzykowski, & Clark, 2007).

There have been scales about the sacred as a manifestation of God, but those scales are explicitly theistic. A separate embodiment of sacred essence scale was developed for this study to help determine if metal fans' sacred objects were perceived as having a magical quality, such as a spiritual connection between the object and an associated musical artist, instead of a spiritual connection with a god. This measure served both as a way of measuring the sacred in a secular context, as well as a manipulation check to make sure the artefacts were being associated with the divine.

#### 7.1.5. Hypotheses

A series of vignettes were used that described a person losing something that is valuable to them, and the descriptions were consistent with either sacred loss, desecration, or non-sacred loss (control). Three outcomes were expected from this study: 1) To identify the items that are considered most sacred in the metal worldview, 2) if these items are perceived to have a spiritual or magical quality, and 3) to assess if violations of sacred objects result in significantly different emotional responses than the loss of sacred objects and loss of non-sacred objects. Consistent with the Pargament, Magyar, Benore, & Mahoney study (2005), it was expected that desecration vignettes would result in higher levels of desecration appraisal and anger (externalized distress) than in the sacred loss and non-sacred loss conditions. Further, participants were expected to have higher levels of anxiety and sadness (internalized distress) following the sacred loss vignettes when compared to the non-sacred loss vignettes.

## 7.2. Method

### 7.2.1. Participant information

A within-subjects experiment was conducted with three levels (desecration, sacred loss, non-sacred loss as the control) through a survey distributed on social networking sites.

Participants needed to be 18 years of age or older and a self-identified fan of metal music to participate. Fifty-two participants completed the study. Most participants were male (75%; female 25%). Mean age was 32 (SD = 8.72). Most participants were white/Caucasian (82.7%; 1.9% black; 1.9% Asian; 9.6% Latino; 3.8% other). Half of the participants were single and had never been married whereas 44.2% were married or living as, and 5.8% were divorced. When it came to religious affiliation, the largest percentage identified themselves as atheist (25%), followed by none (23.1%), Christian (13.5%), Agnostic (11.5%), Pagan (7.7%), Satanic (5.8%), Wiccan (3.8%), Islamic (1.9%), or other (7.7%). The other category included Christian-Pagan, Discordian, spiritual but not religious, and a hybrid of atheism and Wicca. The level of education varied greatly, with 7.7% having attended some high school or less, 17.3% graduated from high school without further education, 28.8% attended some college, 5.8% had an Associate degree, 26.9% had a Bachelor's degree, 5.8% had a Master degree, 5.8% had obtained a PhD, and one participant earned a certificate for welding. Most participants were from the United States (46.2%), the United Kingdom (17.3%), Canada (9.6%), or Germany (5.8%). There were single participants from Aruba, Austria, Bangladesh, Belgium, Bolivia, Costa Rica, France, Portugal, the Republic of North Macedonia, Serbia, and The Netherlands.

Participants were asked which type of metal fan that they were first and foremost, which resulted in 42.3% death metal, 15.4% heavy metal, 13.5% thrash, 13.5% black metal, 7.7% doom metal, and 7.7% other. The "other" category included grindcore, post-black metal, power metal, and symphonic metal fans.

### 7.2.2. Overview of study procedures

The study's hypotheses were pre-registered with the Open Science Framework (DOI: 10.17605/OSF.IO/8PHT7). It was conducted via an online survey distributed through general metal music social networking groups. Participants were given a list of potentially sacred

metal artefacts, and asked to identify the most important item in their metal collection, wardrobe, or that they associate with their metal worldview. This item could be a piece of memorabilia or an artefact that is sacred to them, such as a battle jacket, a rare or signed album, a photograph, a guitar pick, etc. Then participants chose one item from the list of potentially important items (e.g., a rare or original pressing of a CD, vinyl, or cassette; an item signed by a musician; an item that belonging to a musician performing on stage; a metal-related heirloom passed down by a family member, etc.). Participants were given the option to write in a response if none of the options adequately described their item. After identifying this item, they were asked open-ended questions to describe the item more thoroughly, explain what it means to them, how it would change their life if the item were lost, and what they want to happen to the item after they die. Included in these questions was a question to gauge the value of the item, varying from less than a hundred dollars to the item being priceless. This was to identify one of the characteristics of the sacred, i.e. its priceless (Taves, 2009). Lastly, participants answered demographic questions, were debriefed, and thanked for completing the study.

### 7.2.3. Overview of study measures

The objective of the study was to identify sacred metal cultural artefacts, determine if they're perceived as having a magical quality, and assess if the loss or violation of these artefacts would result in different levels of anxiety, aggression, and depressive symptoms compared to non-sacred loss. To achieve these goals, a list of potential sacred metal cultural artefacts were compiled, vignettes were created that incorporated some of those artefacts, appraisal scales were selected to assure that the three types of vignettes were being accurately perceived, and then scales were selected for the three affective measures (anxiety, depressive symptoms, and anger).

### *7.2.3.1. Establishing sacred artefacts*

Based on the most common metal artefacts owned by participants in the first study of this thesis, a list of potentially sacred metal cultural artefacts were created. Items included signed memorabilia, rare out-of-print pressings of an album, and homemade battle jackets. See appendix 14 for the complete list.

### *7.2.3.2. Appraisal measures & vignettes*

Participants read a series of six vignettes and filled out various scales after each. The study design was within-participants, so all participants answered to the six vignettes, but their order was randomized for each person. There were three types of vignettes presented (two of each type): sacred loss, desecration, and non-sacred loss. The vignettes all detailed a story between a person and an item. In the sacred loss and desecration vignettes, it was described with greater detail that the item was of great importance to the protagonist in the story. There were two vignettes for each condition, and the protagonist's gender was counter-balanced in each pairing, with the main character being male in one story and female in the other. The sacred loss and desecration vignettes described the bond between the person in the story and a sacred metal artefact. In the case of the desecration vignettes, the sacred items were violated as the musician associated with the item did something horrible that broke the positive bond between the protagonist and the item (e.g., the musician was revealed to be a rapist or a paedophile). The vignettes were based on real events that were widely publicized in the metal community but no identifiers of real bands or people were used.

Two of the vignettes described a person going through the loss of a sacred item without a violation of the sacred. These vignettes described losing the item, but without any foul play involved. The last two vignettes described a person experiencing the loss of a non-sacred item, such as a pair of jeans being ruined, neither of which included an element of desecration. These vignettes were used to measure three conditions that would be compared

in the results: desecration, sacred loss, and non-sacred loss. An example of each type of vignette is provided below, but see appendix 15 for the full list.

The first set of questions following each vignette was adapted from Pargament, Magyar, Benore, & Mahoney (2005) which measured the extent to which the stories were

#### Non-sacred loss vignette

Every year, Sam would receive a gift card for his favorite clothing store for his birthday. This year, he was eager to buy himself some new jeans. He took his time at the clothing store, trying on a dozen pairs of jeans before deciding on a pair that he really liked. They fit him well, were stylish, and were within the budget of his gift card. He was looking forward to wearing them the next time he would hang out with his friends. Sam excitedly purchased his new pants, and went home to wash them. As Sam sorted his laundry, he was unaware that the cap on a nearby bottle of bleach was loose. Sam tripped on his laundry basket, but caught himself using the shelf that the bleach was on. This caused a chain reaction, and some of the bleach poured onto Sam's new jeans. It wasn't a lot of bleach, but it was enough to ruin his new jeans. Discouraged and upset, he threw his new jeans in the trash.

#### Sacred loss vignette

Roberto was an avid collector of vinyl albums for many years. His favourite album that he owns was a 1988 original pressing that regularly sells online for around a thousand dollars. The album is Roberto's most prized possession, and it is one thing that he proudly shows to any guests that visit his house. Recently, Roberto lost his job, and he is struggling to pay off his ever-increasing debts. He did not have a means of paying his most recent housing bill, which was for a thousand dollars. Roberto was unwilling to become homeless, so he had to find a way to pay off the payment in time. Although Roberto loves his 1988 first press album more than anything else he has, it seemed as though the only way to keep his house was to sell his favourite album. Roberto sold his album, knowing that he can never replace it.

#### Sacred loss with desecration vignette

Alexandra's favourite band had helped her get through many hard times in her life. She related to the lyrics, and the intensity of the music helped Alexandra get motivated to tackle life's obstacles. The second time that Alexandra saw the band live, she was able to meet the members after the show. The guitarist of the band signed her favourite album. After that day, the signed album was always the centrepiece of Alexandra's record collection. The signed album meant a lot to her. Recently, metal news tabloids had begun reporting on the arrest of Alexandra's favourite guitarist. It was clear that the guitarist was a paedophile, and the content that was described by authorities on the guitarist's computer made Alexandra sick to her stomach. Alexandra could no longer bear to look at the signed album that was so important to her. Alexandra destroyed the album.

identified by participants to be nontheistic sacred loss or nontheistic desecration. Wording on the items was tweaked from their original study in cases where the wording contained theistic content. Both maintained strong reliabilities (Nontheistic loss,  $\alpha = .91$ ; Nontheistic desecration,  $\alpha = .88$ ). These items can be found below:

#### Nontheistic Loss

1. Something that gave sacred meaning to my life is now missing.
2. Something of sacred importance in my life disappeared when this event took place.
3. I suffered a loss of something that was an important gift in my life's journey
4. Something I held sacred is no longer present in my life.
5. A source of spirituality became absent in my life.
6. In this event, something central to my spirituality was lost.
7. Part of the pain of this event involved the loss of a blessing.

#### Nontheistic Desecration

1. A violation of something spiritual to me occurred.
2. This event was an immoral act against something that I value.
3. The event was a disgraceful act involving something meaningful in my life.
4. Something evil ruined a blessing in my life.
5. A sacred part of my life was violated.
6. This event was a transgression of something sacred.
7. Something that was sacred to me was destroyed.

#### *7.2.3.3. Affective measures*

Following the sacred loss and desecration appraisal items, participants filled out scales that measured to what extent they would react to the situation through depressive symptoms (shortened CES-D Depressive symptomatology; Karim, Weisz, Bibi, & ur Rehman, 2015), anger, and anxiety (taken from the State-Trait Anger Expression Inventory; Spielberger, 1991). The State-Trait scales were used to stay consistent with the Pargament,

Yagyar, Benore, & Mahoney study (2005). The shortened CES-D was chosen for its short length and wide usage. All scales had strong reliabilities with Cronbach's Alpha levels above .80 (Anger,  $\alpha = .89$ ; Anxiety,  $\alpha = .85$ ; CES-D,  $\alpha = .86$ ). All three scales can be found in appendix 17 and appendix 18.

#### 7.2.3.4. *Magical essence measure*

A 5-item sacred connection scale was developed in place of a more theistic manifestation of God scale, which had strong reliability ( $\alpha = .84$ ). See below for the full list of items.

1. Part of the musician is still present in the item
2. Something has been transferred from the musician into the item that is difficult to describe
3. I feel a strong connection between myself and the band/musician through this item
4. This item is a sacred item to me that I would never sell.
5. This item has a power that is difficult to describe or explain.

After identifying their most sacred metal artefact, participants filled out the sacred connection scale, which included five items ranked across a five-point Likert scale (i.e., To what extent do you feel that...).

#### 7.2.3.5. *Exploratory measures*

Participants were asked qualitative questions that are used in this study to further contextualize the quantitative data. These questions included what they want to happen to their sacred artefact after they die and how they would feel if their sacred item was lost.

### 7.3. Results

I sought to quantify what kinds of artefacts were considered sacred (7.3.1.), if the manipulation was working (e.g., if participants correctly appraised the vignettes as



desecration, loss, etc.; 7.3.2.), the differences between the internalized and externalized types of affective responses between each vignette (7.3.3.), if the sacred objects were perceived as having a magical connection between the owner and the affiliated musician (7.3.4.), and results found after some exploratory analyses (7.3.5.).

### 7.3.1. Artefacts established

Metal members identified their most sacred items, which fell into the categories found in Table 2. Additional options were included, but were not selected by participants (e.g., a metal-related heirloom passed down by a family member).

Item	Number	Percent
an item that is signed by a musician / an item acquired from a musician	17	32.6
a rare or original pressing of a CD, vinyl, or cassette	12	23.1
a shirt or hoodie	5	9.6
a battle jacket or vest	4	7.7
a metal-related tattoo	4	7.7
an album that the participant performed on	4	7.7
a patch	2	3.8
a photograph with a musician or metal friends	2	3.8
Other: cumulative concerts or collections	2	3.8

Table 2: Frequencies of most sacred items by type

### 7.3.2. Appraisal results

A Wilks' Lambda test of within-subjects effects revealed that there was a significant effect of the type of vignette on sacred loss appraisals, desecration appraisals, and the experience of anger, anxiety, and depressive symptoms in response to the vignettes,  $F(10,196) = 35.87, p < .001, \eta^2 = .647$ . The observed power was 1.00, indicating a very low probability of Type 1 Error. Pairwise comparisons revealed where significant differences

exist, however, when using a Bonferroni correction to account for multiple comparisons (15 comparisons,  $\alpha = .05/15 = .003$ ), one of the differences was no longer significant.

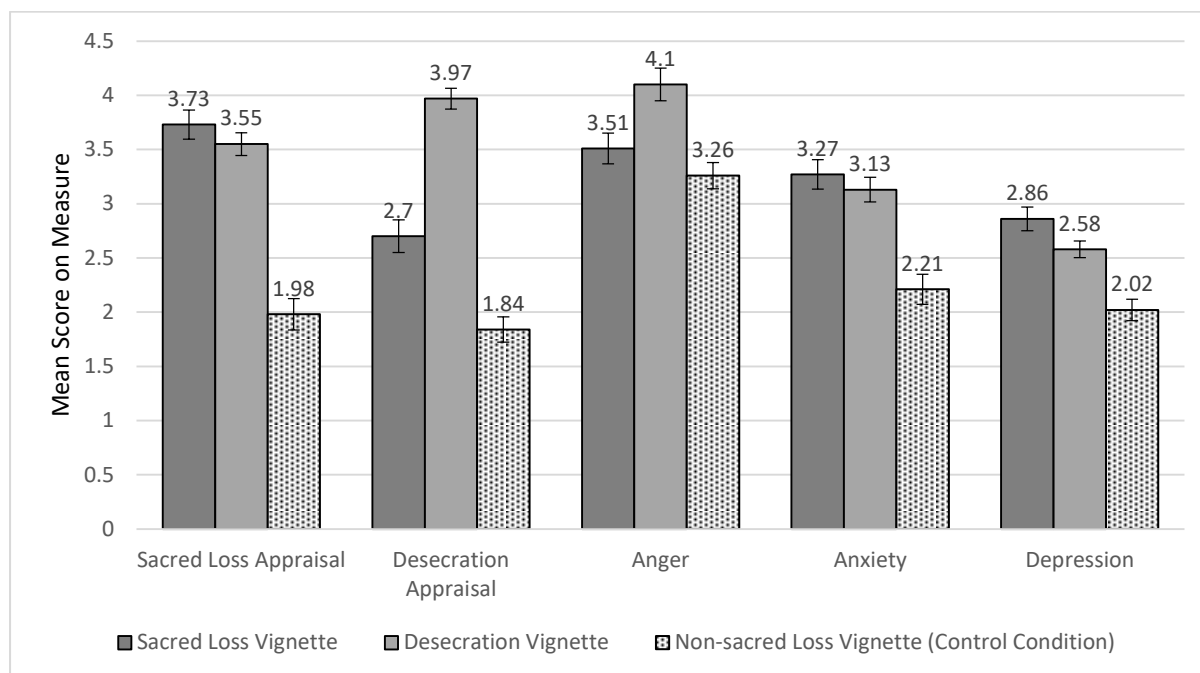


Figure 1: Appraisals and emotional responses to three types of loss

Sacred loss ( $M = 3.73$ ) and desecration vignettes ( $M = 3.55$ ) were both rated as being significantly appraised more strongly on sacred loss than control vignettes ( $M = 1.98$ ,  $p < .001$ ), however, sacred loss and desecration vignettes were rated similarly to the extent that they described sacred loss ( $p = .54$ ). Desecration vignettes ( $M = 3.97$ ) were rated as being significantly higher on desecration than either sacred loss vignettes ( $M = 2.70$ ,  $p < .001$ ) or control vignettes ( $M = 1.84$ ,  $p < .001$ ). Desecration vignettes ( $M = 4.10$ ) also resulted in significantly higher levels of anger following the desecration than in the sacred loss ( $M = 3.51$ ;  $p < .001$ ) and control loss conditions ( $M = 3.26$ ;  $p < .001$ ).

### 7.3.3. Affective results

Anger following the sacred loss and control loss conditions did not significantly differ ( $p = .15$ ). Both sacred loss ( $M = 3.27$ ) and desecration vignettes ( $M = 3.13$ ) generated higher levels of anxiety than the control vignette ( $M = 2.21$ ;  $p < .001$ ), but they did not differ

significantly from each other ( $p = .84$ ). Sacred loss vignettes ( $M = 2.86$ ) generated significantly higher levels of depressive symptoms than either the desecration ( $M = 2.58$ ;  $p = .007$ ) or control vignettes ( $M = 2.02$ ;  $p < .001$ ), however the difference between sacred loss and desecration vignettes on depressive symptoms is no longer significant when applying a Bonferroni correction for multiple comparisons. Desecration vignettes also generated higher level of depressive symptoms than the control vignettes ( $p < .001$ ). A summary of the findings can be found in Figure 1.

#### 7.3.4. Magical essence of artefacts results

The average score on the magical essence scale was 4.04 on a five-point scale ( $SD = .82$ ), where 4 reflected a moderate spiritual connection to the musician that the object was affiliated with, through the object. Pearson bivariate correlations supported that there is a significant, positive relationship between believing that a metal artefact is imbued with a magical quality, and rating the loss of important metal artefacts as sacred losses ( $r = .50$ ,  $p < .001$ ) or desecrations of the sacred ( $r = .29$ ,  $p = .04$ ). In addition, viewing objects as imbued with a magical quality was associated with greater levels of anger ( $r = .47$ ,  $p < .001$ ), anxiety ( $r = .46$ ,  $p = .001$ ), and depressive symptoms ( $r = .30$ ,  $p = .03$ ) following the loss of a sacred artefact. On average, people that believe metal cultural artefacts can have magical properties experience the loss of those artefacts more severely. The vast majority of participants (76.9%) said that they would never sell their most sacred item at any price, even when given the option of a million dollars, which is consistent with the notion that sacred objects are priceless (Taves, 2009). There was not a significant difference between which types of sacred metal items were rated as having a magical essence with their affiliated musician.

#### 7.3.5. Exploratory results

Participants were asked what they wanted to happen to their sacred artefact after they die. Most participants wanted the item to be passed on to a family member, often their

children (40.4%) or passed on to another metal fan that will appreciate it (30.8%). Just over a fifth of the participants wanted to be buried with their sacred item (21.1%). Only 7.7% of participants did not know what they wanted to happen to the item after they die, or did not care what happened to it. For those that said they wanted to pass the item on to another metal member, they often emphasized that the metal member should be younger, indicating a passing of the torch across generations. Participants were also asked how their life would change if their sacred item was gone. Responses varied widely, with some saying that they would be upset, but then move on, and with others describing much stronger emotional responses, such as crying and anger. In the more extreme descriptions, four participants said that they would be “devastated,” two said that they would be “guttled,” and one said that losing the item would be as if they “had lost an arm.” Another participant said that they would “mourn it forever.” One participant described that they “would feel lost and empty, like an old friend died.” Another said that they would feel “empty inside.” These were open-ended responses, so although they were not quantified, it is clear that there is some variety in the degree of severity of the responses to the loss of a sacred cultural artefact, which is reinforced by the vignettes part of the study.

#### 7.4. Discussion and conclusions

Building off the findings of the previous chapters on the positive aspects of the secular sacred, this study has found evidence that the negative aspects parallel those of the religious sacred. Desecration vignettes were accurately recognized as describing desecration, and both desecration and sacred loss vignettes were interpreted as losses that were more sacred than the control condition. Consistent with past findings (Pargament et al., 2005), desecration vignettes generated higher levels of anger than sacred loss or control conditions. Both sacred loss with and without desecration generated higher levels of anger, anxiety, and depressive symptoms than the non-sacred loss condition, although once correcting for

multiple comparisons, depressive symptoms did not differ significantly between sacred loss and desecration appraisals, so this study cannot definitively say if secular sacred loss is more internalized through depressive symptoms than sacred loss with desecration, as was found in the aforementioned study on religious sacred loss. What it can say, which is another novel finding of this thesis, is that believing that sacred artefacts are imbued with a magical essence (e.g., the essence of a metal musician), results in greater feelings of anger, anxiety, and depressive symptoms if that item is lost or desecrated. In other words, metal members that believe their possessions are imbued with a magical quality will more severely experience the loss of those possessions. This was the first study exploring sacred loss and desecration within the context of the secular sacred, and it has supported the notion that secular sacred loss and the violation of the sacred are experienced emotionally in similar ways as to what is found in religious sacred loss and desecration. This study also helps identify some characteristics of secular sacred artefacts, since participants rated their most sacred possessions as having some degree of magical connection between themselves, the item, and the artist that the item was associated with. Outside of this, it was found that metal members continue to hold their items in high esteem when imagining their own deaths, primarily by wanting to either be buried with their item, or to pass the artefact on to future generations of metal members. A future study could investigate to what extent that metal members believe that the imbued spiritual quality of their artefacts remains as they pass them onto to other metal members, and to what extent the next metal member perceives that same quality as existing, in case the findings are similar to the second study of this thesis, which found that sacred appraisals are heavily individualized.

A small percentage of participants identified their most sacred item as being an album that they performed on. This ties well into the symbolic immortality literature (Sturesteps, 2013), which states that people can deal with life's finitude by accomplishing something that

lives beyond the human lifespan, whether tangible or through great accomplishments. An interesting future direction could explore the role of a musician's musical legacy in fulfilling symbolic immortality, and thus, waning fears of death.

The study was limited by the recruitment advertisements, which might have resulted in a sample that doesn't completely represent metal members. Advertisement for the study mentioned objects that are important to metal members, so it could be the case that some metal members do not have cultural artefacts that are important to them, and they likely would not have participated in the study. Future studies could correct this by recruiting without revealing the cultural artefact aspect of the study in advance.

## Chapter 8: General discussion

### 8.1. Main findings

This thesis operationalized what the secular sacred is, what it does, how it is experienced, and how an individual feels when it is lost. There were three basic aims of this thesis, all of which have been successfully explored through the empirical research included here. In a secular context, 1) the sacred has been identified as having larger experiential and affective qualities than what is experienced through the good and enjoyable. Consistent with literature on the religious sacred (Pargament, Magyar, Benore, & Mahoney, 2005), as well as consistent with other mechanisms within worldviews, the secular sacred has been identified by its ability to 2) fulfil psychological needs including improving affect, increasing prosocial behavioural intentions, and promoting social relatedness. Finally, 3) the loss of the secular sacred has been shown to have the same characteristics as the loss of the religious sacred, and that includes in cases of desecration where a violation of the sacred has occurred. This was shown through a comparison with non-sacred loss. In addition, it was found that when sacred objects were lost that were perceived as having a magical essence (e.g., that spiritually connects the metal member to a metal musician), then the loss of that object would be experienced more severely. Overall, this thesis has supported that the positive and negative aspects of the sacred extend to the secular sacred.

The second chapter outlined psychological needs categories, and consistent with those categories, this thesis has provided evidence that the metal worldview helps fulfil forward-driving needs (study 1), socially-driven needs (studies 1 & 2), mental and emotional well-being, and self-enhancement needs (study 2), and one of the prominent mechanisms that fulfils those needs for metal fans is the sacred. Forward-driving needs reflect a drive for achievement, goal pursuit and mastery, which previous research has found can be fulfilled through a religious worldview (Martos, Kézdy, & Horváth-Szabó, 2011), and this thesis has

shown that they are fulfilled through a largely secular metal worldview as well. The mechanisms for fulfilling these needs for dedicated metal members were personal, motivational, and experiential metal behaviours (e.g., using metal music to pursue a goal via increasing motivation). These metal members also frequently engaged in metal communal support activities which fulfil the socially-driven needs for social support and belonging. These behaviours included supporting their local music scene, providing resources so that bands can play in their town, traveling to places out of their city, state, and country to support bands they enjoy, and choosing metal-themed restaurants and bars over their non-metal equivalents. The second study built on this finding, as it was found that sacred metal music was used more than other forms of music to fulfil mental and emotional well-being, self-enhancement, and socially-driven psychological needs through using the music to regulate arousal and mood, to help facilitate contemplation about the self, and as a way to feel connected with other metal fans.

Consistent with the claim that metal musicians act as vessels for bringing transcendence to metal members (Weinstein, 1991), the first study illustrated that metal members, in turn, describe prominent metal musicians using sacred-like language. The perceived sacred qualities of these musicians extend beyond metal concerts, as many metal members believe that their music is sacred (the second study) and that their most sacred metal artefacts are imbued with a magical essence that spiritually connects them to their favourite musicians. This not only describes a multi-level relationship with the sacred by members of a secular worldview, but it also provides evidence that the relationship that fans of metal music have with their music and worldview goes much deeper than music appreciation and social rebellion. The metal worldview is also a source where they interact with the sacred, and that relationship and its outcomes are multifaceted. Consistent with claims that the sacred is priceless (Taves, 2009) and that people go through great lengths to maintain it (Pargament &



Mahoney, 2005b), the third study found that metal members' sacred artefacts are held at such a level of esteem that most refuse to sell them at any price, and that they want to either be buried with it or to pass their items on to the next generation of the metal worldview.

## 8.2. Implications

There were two major areas of study on which this thesis will have an impact. First, it is one of the first empirical works in psychology exploring the existence of the sacred within secular contexts, especially among primarily non-religious people, so much has been added to the literature within psychology of religion. It has been shown that the secular sacred performs similar functions to the religious sacred, and the experience of sacred loss is characteristically and affectively similar to religious sacred loss. Not only do metal fans enjoy metal music, it also helps them self-regulate, it reinforces their identity, and it acts as tool to promote social relatedness with other metal fans, similar to how a religious worldview can fulfil self-regulation through religious belief (Ano & Vasconcelles, 2005; Smith, McCullough, & Poll, 2003) and meaning-making (Steger & Frazier, 2005), and social relatedness through the institutional promotion of prosociality (Sedikides & Gebauer, 2010).

For metal fans, losing the sacred objects that connect them to the metal worldview and metal musicians can have devastating consequences, particularly when that object feels ruined because the associated musician with the item has betrayed the ideals of the metal fan. This is consistent with previous findings on the religious sacred (Pargament, Magyar, Benore, & Mahoney, 2005), which found that losing the sacred results in depressive symptoms and anxiety, and a violation of the sacred results in more feelings of anger than sacred loss without desecration. Past research has looked at various aspects of the sacred, such as its ability to fulfil forward-driving needs through transcendental motivation (Martos, Kézdy, & Horváth-Szabó, 2011) and affective reactions to its experience and loss (Pargament, Magyar, Benore, & Mahoney, 2005), but this is the first study to empirically encompass such a broad

range of facets in a single body of work, including its role in psychological needs fulfilment, how it is experienced compared to the non-sacred, and how two forms of sacred loss are experienced. This thesis adds to the existing literature both because of the focus on the secular sacred, and because it is larger in scope than most studies and it focused on members of a single interconnected worldview. It supports the theoretical work on the sacred as being of utmost importance to the user (Atran, Sheikh, & Gomez, 2014; Pargament & Mahoney, 2005b) and as being a way for a person to connect with something they perceive as divine (Pargament & Mahoney, 2005a).

The other major area of study where this expands the literature is within metal music studies. This is one of the first empirical works in psychology to be added to the metal studies literature, and certainly the first that has this level of detail and nuance. Most of the metal studies literature that currently exists is based in sociology (e.g., Kahn-Harris, 2006; Weinstein, 1991) and anthropology (e.g., Dunn, 2004) and use primarily ethnographic methods, or they use surveys that don't go any further quantitatively than reporting percentages (i.e., no significance tests or relationship tests were performed), which could mean that Type 1 errors could be commonplace in the existing metal studies literature. The surveys that have been conducted using ethnographic approaches are prone to confounds like substance abuse, which is prominent at metal concerts and festivals. The series of three studies about the metal worldview explored here bring a lot of depth to the understanding of how metal music fans hold relationships with metal, and it will help identify the role that the sacred plays in fulfilling psychological needs, while avoiding common confounds in studying metal fans ethnographically like substance abuse.

### 8.3. Expected reactions

Due to the focus in the academic literature on the sacred often being innately religious, this thesis is likely to draw some criticisms for looking to define and measure the

sacred within secular contexts. As was found in the third study of this thesis, metal fans frequently identified their most sacred item as having magical qualities that were difficult to describe. They described artefacts as providing a bond between themselves and the musicians affiliated with the item. Further, the first study found that metal fans consistently use religious language to describe their favourite musician. Even if those labels are more linguistically symbolic than literal, the descriptions are still consistent with magical properties that are beyond the tangible or magical. In other words, those properties require some level of faith and belief in something beyond the physical world, even if in this case, it is an invisible, immeasurable spiritual connection to the metal worldview or figures within it. Even though some of the traits used in the strictly religious literature aren't required to distinguish the sacred in the Durkheimian sense of being an alternative to the ordinary, this thesis has provided evidence of the more traditional views on the sacred characterized by a spiritual connection with a god or gods. In the case of this thesis, language that is traditionally used for gods and saints was being used by metal fans to describe their favourite musicians, and sacred artefacts within the metal worldview were found to reflect a spiritual connection between the metal member and idolized musicians. There are clear parallels between a religious individual feeling that an object like a rosary or a cross can bring them closer to God, and a metal member having an autographed album that they feel connects them to the musician that they idolize. Although the linguistic nature of what traditionally religious language means among metal members has not been investigated in this thesis, it might be an area of interest for future studies. For the purpose of this thesis, the exploration of the sacred focused on the nontheistic sacred in the Durkheimian sense, as sacred was defined as being the contrast to the profane, so the sacred did not need to be associated with a god to be identified. As Pargament & Mahoney (2005) mentioned in their discussion of the nontheistic sacred, the sacred can be interpreted as having a divine or spiritual quality that doesn't have

to be God. The individualized nature of how the sacred has been operationalized here is important to note when trying to make comparisons with the religious sacred, so it is hoped that future research which directly compares the two can acknowledge that. A religious individual might regard Gregorian chant to be sacred music, but similar as to was speculated in the second study of this thesis, that won't have nearly the influence on an individual as a song that the individual identifies as their most sacred music, which might not be the Gregorian chant that they identified as sacred music. Whether in a religious or secular context, it is clear that the sacred has a strong connection to a person's identity and their worldview. This thesis is consistent with Durkheim's explanation of the sacred being something that is not ordinary, and it is consistent with the notion that the sacred has a spiritual quality, even within a secular context among secular people.

To ground these findings further in existing metal theory, the findings have been consistent with Weinstein's (1991) claims that the metal worldview has sacred aspects that parallel religious worldviews and Coggin's (2016) finding that metal can generate mystical and transcendent experiences, and those have been empirically supported by this thesis through music being perceived as sacred and fulfilling psychological needs, through participants reporting that they have experienced transcendence while listening to metal music, and through participants' devastating responses to the loss of sacred aspects of their worldview. The parallels with religion also extend to prominent figures in the metal community, which Weinstein likened to shamans due to their ability to generate transcendent experiences for metal members, and that has been supported in this thesis through the confirmation of metal fans as describing their favourite musicians using sacred-like language, and through their acknowledgment that sacred metal artefacts serve as a way of connecting them to their idolized musicians in a spiritual way.

#### 8.4. Limitations

Although this thesis accounted for nuance by controlling for type of metal member via their preferred subgenre, it did not explore differences in metal fans based on country of origin. This was justified by defining the samples across the studies as a single, interconnected online metal community which is consistent with previous claims that metal cultures can extend beyond political borders (Guibert & Guibert, 2016; 2013; Ury-Petes, 2016), however, that does not mean that differences do not exist globally, as non-metal cultural heritages can influence metal culture too (Hecker, 2016; Karjalainen, & Sipilä, 2016; Levine, 2009; Dairianathan, 2009; Weston, 2011). More specifically, these studies are limited in scope in that they primarily utilize a WEIRD (Western, Educated, Industrialized, Rich, and Democratic) sample, which limits the generalizability of the results to Eastern cultures (Henrich, Heine, & Norenzayan, 2010). It is known that some members of metal culture in the East persist in embracing their metal lifestyle even under threat of death for doing so (Moretti, & Alvi, 2007; Yossman, 2016; Capper & Sifre, 2009; Darwish, 2018), so it could be the case that the secular sacred plays an even greater role for metal cultural members outside of WEIRD samples. Future research could replicate these findings within those samples.

#### 8.5. Future directions

Although this study focused on the metal music cultural worldview, with a particular focus on extreme subcultures like black and death metal, similar studies could be run with other dedicated music communities, such as punk rock. However, the extent to which other worldviews are centered around a musical style is likely to be limited, as it has been found that listeners of metal music are more loyal and dedicated to their musical preferences than fans of other types of music (Hooton, 2015). To test this assumption, a study could be formulated that investigated perceived sacredness of preferred music among fans of different

styles of music, comparing genres such as metal music, punk rock, and pop music. It is likely that metal and punk rock fans will perceive their preferred music as more important and more sacred than pop music fans.

Outside of music cultures, future studies could investigate the psychological functions of the secular sacred in other contexts, such as among dedicated Humanists. The expected difficulty in applying this research to general secular populations is first determining what aspects of each respective secular worldview have the potential to be considered sacred, and also determining what each individual's worldview is. A clear example of a worldview is found in metal music culture, but in instances where secularism is less structured, as is the case in United States and much of Europe, worldviews and their sacred aspects are likely to be more individualized. To investigate this further, I would propose a multi-study mixed-methods approach, with an initial study using qualitative questions to determine potentially sacred aspects (including meaning-making aspects) of a secular individual's life, and then developing a second study to determine the extent to which those aspects fulfil psychological functions for that individual compared to non-sacred aspects in their lives.

## 8.6. Conclusions

This thesis provides evidence that the sacred exists within secular communities - even within the context of a community that is often overtly in opposition to organized religion (even as it functions similar to a religion), such as the metal worldview. The secular sacred can produce a number of strong emotional responses and fulfil psychological functions comparable to what is found from the religious sacred. There is also an attachment to the secular sacred that can result in feelings of anger, anxiety, and depression when the sacred is lost or desecrated. Further, there is early evidence that the secular sacred is perceived as being imbued with an immeasurable spiritual essence that future studies could investigate in more depth, meaning that even in a secular worldview, the sacred has spiritual qualities.

These studies give support that sacred aspects of worldviews exist outside of religious cultures, and the affective reactions to those aspects, including to sacred losses and violations of the sacred, are comparable to what is found within religion. It is hoped that this research will help build toward further exploration of the sacred in secular communities.

## References

- Aarons, H. (2018). Moral Distinction: Religion, musical taste and the moral cultural consumer. *Journal of Consumer Culture*, 1469540518787584.
- Abu-Raiya, H., Pargament, K. I., Mahoney, A., & Trewno, K. (2011). On the links between perceptions of desecration and prejudice toward religions and social groups: A review of an emerging line of inquiry. *Implicit Religion*, 14(4), 455-482.
- Agadjanian, V., & Yabiku, S. T. (2015). Religious belonging, religious agency, and women's autonomy in Mozambique. *Journal for the Scientific Study of Religion*, 54(3), 461-476.
- Aghababaei, N. (2016). Scientific faith and positive psychological functioning. *Mental Health, Religion & Culture*, 19(7), 734-741.
- Aghababaei, N., Sohrabi, F., Eskandari, H., Borjali, A., Farrokhi, N., & Chen, Z. J. (2016). Predicting subjective well-being by religious and scientific attitudes with hope, purpose in life, and death anxiety as mediators. *Personality and Individual Differences*, 90, 93-98.
- Ahmadi, F. (2013). Music as a method of coping with cancer: A qualitative study among cancer patients in Sweden. *Arts & Health*, 5(2), 152-165.
- Alcorta, C. S., & Sosis, R. (2005). Ritual, emotion, and sacred symbols: The evolution of religion as an adaptive complex. *Human Nature*, 16(4), 323-359. doi:10.1007/s12110-005-1014-3
- Alderdice, J. T. (2009). Sacred Values. *Annals of the New York Academy of Sciences*, 1167(1), 158-173.
- Alderslade, M. (2018, May). Metal isn't a genre, it's a way of life. *Metal Hammer*, 308.



- Ammerman, N. T. (2013). Spiritual but not religious? Beyond binary choices in the study of religion. *Journal for the Scientific Study of Religion*, 52(2), 258-278.
- Anderson, C. A., Carnagey, N. L., & Eubanks, J. (2003). Exposure to violent media: The effects of songs with violent lyrics on aggressive thoughts and feelings. *Journal of Personality and Social Psychology*, 84(5), 960.
- Anderson, C. A., & Bushman, B. J. (2002). The effects of media violence on society. *Science*, 295(5564), 2377-2379.
- André, N. (2009). I am not a lucky person: An examination of the dimensionality of beliefs about chance. *Journal of Gambling Studies*, 25(4), 473.
- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: A meta-analysis. *Journal of Clinical Psychology*, 61(4), 461-480.
- Argo, J. J., Dahl, D. W., & Morales, A. C. (2006). Consumer contamination: How consumers react to products touched by others. *Journal of Marketing*, 70(2), 81-94.
- Arnett, J. (1991). Adolescents and heavy metal music: From the mouths of metalheads. *Youth & Society*, 23(1), 76-98.
- Ashforth, B. E., & Vaidyanath, D. (2002). Work organizations as secular religions. *Journal of management inquiry*, 11(4), 359-370.
- Atran, S., & Ginges, J. (2012). Religious and sacred imperatives in human conflict. *Science*, 336(6083), 855-857.
- Atran, S. (2010). *Talking to the enemy: Violent extremism, sacred values, and what it means to be human*. Penguin: London, UK.
- Atran, S., & Axelrod, R. (2008). Reframing sacred values. *Negotiation Journal*, 24(3), 221-246.

- Atran, S., Sheikh, H., & Gomez, A. (2014). Devoted actors sacrifice for close comrades and sacred cause. *Proceedings of the National Academy of Sciences*, *111*(50), 17702-17703.
- Backus, L. (2015). *Sanctification of work: A potential moderator of the relationship between work stress and health*. (Doctoral dissertation, Bowling Green State University, Ohio, USA). Retrieved from [https://etd.ohiolink.edu/pg\\_10?0::NO:10:P10\\_ACCESSION\\_NUM:bgsu1363199031](https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:bgsu1363199031)
- Baka, A. (2015). The forming of a metalhead: Constructing a subcultural identity. *Modern Heavy Metal: Markets, Practices and Cultures*. Aalto: Aalto University, 55-63.
- Bakagiannis, S., & Tarrant, M. (2006). Can music bring people together? Effects of shared musical preference on intergroup bias in adolescence. *Scandinavian Journal of Psychology*, *47*(2), 129-136.
- Baker, F., & Bor, W. (2008). Can music preference indicate mental health status in young people?. *Australasian Psychiatry*, *16*(4), 284-288.
- Bald, M. (2011). *Literature suppressed on religious grounds*. 3rd edn. New York: Facts on File.
- Batara, J. B. L. (2016). Religious song as a facilitator of prosocial behavior. *International Journal of Research Studies in Psychology*, *5*(1), 3-12.
- Baumsteiger, R., & Siegel, J. T. (2018). Measuring prosociality: the development of a prosocial behavioural intentions scale. *Journal of Personality Assessment*, 1-10.
- Beerthuizen, M. G., Weijters, G., & van der Laan, A. M. (2017). The release of Grand Theft Auto V and registered juvenile crime in the Netherlands. *European Journal of Criminology*, *14*(6), 751-765.

- Belk, R. W., Wallendorf, M., & Sherry Jr, J. F. (1989). The sacred and the profane in consumer behaviour: Theodicy on the odyssey. *Journal of Consumer Research*, 16(1), 1-38.
- Bennett, J., & Huberman, J. (2015). From monuments to megapixels: Death, memory, and symbolic immortality in the contemporary United States. *Anthropological Theory*, 15(3), 338-357.
- Bergami, M., & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology*, 39(4), 555-577.
- Black Sabbath super fan's living room rebuilt in museum (2019, June 25). Retrieved from <https://www.bbc.co.uk/news/uk-england-birmingham-48744232>
- Blogowska, J., Lambert, C., & Saroglou, V. (2013). Religious prosociality and aggression: It's real. *Journal for the Scientific Study of Religion*, 52(3), 524-536.
- Bottan, N. L., & Perez-Truglia, R. (2015). Losing my religion: The effects of religious scandals on religious participation and charitable giving. *Journal of Public Economics*, 129, 106-119.
- Boyce-Tillman, J. (2017). Sounding the sacred: Music as sacred site (the search for a universal sacred music). In *Indigenous Religious Musics* (pp. 148-178). Routledge.
- Brown, L. (2016). Tourism and pilgrimage: Paying homage to literary heroes. *International Journal of Tourism Research*, 18(2), 167-175. doi:10.1002/jtr.2043
- Bullivant, S., Farias, M., Lanman, J., & Lee, L. (2019). Understanding unbelief: atheists and agnostic around the world. Interim findings from 2019 research in Brazil, China, Denmark, Japan, the United Kingdom, and the United States. Retrieved from

<https://research.kent.ac.uk/understandingunbelief/wp-content/uploads/sites/45/2019/05/UUReportRome.pdf>

- Bushman, B. J., & Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics & Adolescent Medicine*, *160*(4), 348-352.
- Buxant, C., & Saroglou, V. (2008). Feeling good, but lacking autonomy: Closed-mindedness on social and moral issues in new religious movements. *Journal of Religion and Health*, *47*(1), 17-31. doi:10.1007/s10943-007-9142-1
- Caldwell-Harris, C. L., Wilson, A. L., LoTempio, E., & Beit-Hallahmi, B. (2011). Exploring the atheist personality: Well-being, awe, and magical thinking in atheists, Buddhists, and Christians. *Mental Health, Religion & Culture*, *14*(7), 659-672.
- Capper, A., & Sifre, G. (2009). *Heavy metal in Baghdad: The story of Acrassicauda*. New York, New York: Simon and Schuster.
- Cardwell, T. (2017). *Still life and death metal: Painting the battle jacket* (Doctoral dissertation, University of the Arts London, London). Retrieved from <http://ualresearchonline.arts.ac.uk/12036/1/Thesis%20TC%20final%20PV%20edit%20%282%29%20Web%20version.compressed.pdf>
- Carlson, C. L. (2018). Jazz, drama, and a librarian: Advocating against book censorship in public schools. *Kansas English*, *99*(1).
- Carroll, S. T., Stewart-Sicking, J. A., & Thompson, B. (2014). Sanctification of work: assessing the role of spirituality in employment attitudes. *Mental Health, Religion & Culture*, *17*(6), 545–556. <https://doi.org/10.1080/13674676.2013.860519>
- Chang, P. Y., & Lim, D. J. (2009). Renegotiating the sacred-secular binary: IX saves and contemporary Christian music. *Review of Religious Research*, 392-412.

- Charles, S., Bartlett, J., Messick, K., Coleman, T., & Uzdavines, A. (2019). Research degrees of freedom in the psychology of religion, *The International Journal for the Psychology of Religion*. DOI: <https://doi.org/10.1080/10508619.2019.1660573>  
Preprint available via OSF Preprints. DOI: 10.31234/osf.io/tx5gd
- Cheyne, J. A. (2001). The ominous numinous. Sensed presence and 'other' hallucinations. *Journal of Consciousness Studies*, 8(5-6), 133-150.
- Chory, R. M., & Goodboy, A. K. (2011). Is basic personality related to violent and non-violent video game play and preferences?. *Cyberpsychology, Behaviour, and Social Networking*, 14(4), 191-198.
- Clark, K. J. (2014). *Religion and the sciences of origins: Historical and contemporary discussions*. New York: Palgrave Macmillan.
- Clark, S. S., & Giacomantonio, S. (2013). Music preferences and empathy: Toward predicting prosocial behaviour. *Psychomusicology: Music, Mind, and Brain*, 23(3), 177-186.
- Clarke, E., DeNora, T., & Vuoskoski, J. (2015). Music, empathy and cultural understanding. *Physics of Life Reviews*, 15, 61-88.
- Clobert, M., Saroglou, V., & Hwang, K. K. (2015). Buddhist concepts as implicitly reducing prejudice and increasing prosociality. *Personality and Social Psychology Bulletin*, 41(4), 513-525.
- Coggins, O. (2016). Transforming detail into myth: indescribable experience and mystical discourse in drone metal. *Global Metal Music and Culture: Current Directions in Metal Studies*, 311-329.
- Cohen, S. (2011). *Folk devils and moral panics*. New York, New York: Routledge.

- Coleman III, T. J., & Jong, J. (2019, October 11). Counting the Nonreligious: A critical survey of new measures. <https://doi.org/10.31234/osf.io/7zmpt>
- Coleman III, T. J., Hood Jr, R. W., & Streib, H. (2018). An introduction to atheism, agnosticism, and nonreligious worldviews. *Psychology of Religion and Spirituality*, *10*(3), 203.
- Coleman III, T. J., Hood Jr, R. W., & Streib, H. (2018). An introduction to atheism, agnosticism, & non-religious worldviews. *Psychology of Religion and Spirituality*, *10*(3), 203-206.
- Conn, R., Schrader, M. P., Wann, D. L., & Mruz, B. (1996). Reduction of anxiety about death: Need for beliefs about immortality. *Psychological Reports*, *79*(3), 1315-1318.
- Cragun, R. T., & Sumerau, J. E. (2015). God may save your life, but you have to find your own keys. *Archive for the Psychology of Religion*, *37*(3), 321-342.
- Crescioni, A. W., Baumeister, R. F., Ainsworth, S. E., Ent, M., & Lambert, N. M. (2016). Subjective correlates and consequences of belief in free will. *Philosophical Psychology*, *29*(1), 41-63.
- Critcher, C. (2017). Moral Panics. In *Oxford Research Encyclopedia of Criminology and Criminal Justice*. DOI: 10.1093/acrefore/9780190264079.013.155
- Cupchik, J. W. (2015). Buddhism as performing art: Visualizing music in the Tibetan sacred ritual music liturgies. *Yale Journal of Music & Religion*, *1*(1), 31-62.
- Dairianathan, E. (2012). The burden of song: Vedic metal in Singapore. *Journal of Creative Communications*, *7*(3), 243-260.
- Dairianathan, E. I. (2009). Vedic metal and the South Indian community in Singapore: problems and prospects of identity. *Inter-Asia Cultural Studies*, *10*(4), 585-608.

- Darwish, M. (2018). *Syrian metal is war*. Documentary.
- Davies, C. L., Sibley, C. G., & Liu, J. H. (2014). Confirmatory factor analysis of the Moral Foundations Questionnaire. *Social Psychology*. DOI: 10.1027/1864-9335/a000201
- Davis, D. E., Dooley, M. T., Hook, J. N., Choe, E., & McElroy, S. E. (2017). The purity/sanctity subscale of the Moral Foundations Questionnaire does not work similarly for religious versus non-religious individuals. *Psychology of Religion and Spirituality*, 9(1), 124.
- Davis, D. E., Van Tongeren, D. R., Hook, J. N., Davis, E. B., Worthington, E. L., Jr., & Foxman, S. (2014). Relational spirituality and forgiveness: Appraisals that may hinder forgiveness. *Psychology of Religion and Spirituality*, 6(2), 102–112.  
<https://doi.org/10.1037/a0033638>
- Davis, D. E., Hook, J. N., Van Tongeren, D. R., & Worthington, E. L., Jr. (2012). Sanctification of forgiveness. *Psychology of Religion and Spirituality*, 4(1), 31-39.  
<http://dx.doi.org/10.1037/a0025803>
- Davis, R. I., & Kiang, L. (2016). Religious identity, religious participation, and psychological well-being in Asian American adolescents. *Journal Of Youth And Adolescence*, 45(3), 532-546. doi:10.1007/s10964-015-0350-9
- Day, A., & Rogaly, B. (2014). Sacred communities: contestations and connections. *Journal of Contemporary Religion*, 29(1), 75-88.
- Deal, P. J., & Magyar-Russell, G. (2018). Sanctification theory: Is nontheistic sanctification nontheistic enough?. *Psychology of Religion and Spirituality*, 10(3), 244-253.
- De Backer, C. J., & Hudders, L. (2015). Meat morals: relationship between meat consumption consumer attitudes towards human and animal welfare and moral behaviour. *Meat Science*, 99, 68-74.

- Deci, E. L., & Ryan, R. M. (2011). Self-determination theory. *Handbook of Theories of Social Psychology*, 416-433.
- DeMaris, A., Mahoney, A., & Pargament, K. I. (2010). Sanctification of marriage and general religiousness as buffers of the effects of marital inequity. *Journal of Family Issues*, 31(10), 1255-1278.
- Demerath III, N. J. (2000). The varieties of sacred experience: Finding the sacred in a secular grove. *Journal for the Scientific Study of Religion*, 39(1), 1-11.
- Dickinson, J. L., McLeod, P., Bloomfield, R., & Allred, S. (2016). Which moral foundations predict willingness to make lifestyle changes to avert climate change in the USA?. *PloS one*, 11(10), e0163852.
- Dissanayake, E. (2006). Ritual and ritualization. In Steve Brown & Ulrick Volgsten (Eds.), *Music and Manipulation: On the social uses and social control of music*, (pp. 31-56). New York: Berghahn Books.
- Donat, M., Peter, F., Dalbert, C., & Kamble, S. V. (2016). The meaning of students' personal belief in a just world for positive and negative aspects of school-specific well-being. *Social Justice Research*, 29(1), 73-102.
- Dong, M., Wu, S., Zhu, Y., Jin, S., & Zhang, Y. (2017). Secular examination of spirituality-prosociality association. Survey research in nonreligious-based populations in China. *Archive for The Psychology Of Religion-Archiv fur Religionspsychologie*, 39(1), 61-81.
- Dunn, S. and McFadyen, S. (2005). *Metal: A Headbanger's Journey*, Burbank, CA: Banger Films.



- Dunn, S. (2004). Lands of fire and ice: an exploration of death metal scenes. *Public*, 29, 107-125.
- Durkheim, E. (1976/1912). *The elementary forms of the religious life*. London: George Allen and Unwin.
- Ebesutani, C., Regan, J., Smith, A., Reise, S., Higa-McMillan, C., & Chorpita, B. F. (2012). The 10-item positive and negative affect schedule for children, child and parent shortened versions: application of item response theory for more efficient assessment. *Journal of Psychopathology and Behavioural Assessment*, 34(2), 191-203.
- Eischeid, S. A., Kneer, J., & English, B. (2019). Peace of mind: The impact of metal gestures on stress and power. *Metal Music Studies*, 5(2), 137-150.
- Ellison, C. G., Henderson, A. K., Glenn, N. D., & Harkrider, K. E. (2011). Sanctification, stress, and marital quality. *Family Relations: An Interdisciplinary Journal of Applied Family Studies*, 60(4), 404–420. <https://doi.org/10.1111/j.1741-3729.2011.00658.x>
- Engler, S., & Gardiner, M. Q. (2017). Semantics and the sacred. *Religion*, 47(4), 616-640.
- Farias, M., Coleman III, T. J., Bartlett, J. E., Oviedo, L., Soares, P., Santos, T., & Bas, M. D. C. (2018). Atheists on the Santiago Way: Examining motivations to go on pilgrimage. *Sociology of Religion*, 80(1), 28-44.
- Farias, M., Newheiser, A. K., Kahane, G., & de Toledo, Z. (2013). Scientific faith: Belief in science increases in the face of stress and existential anxiety. *Journal of Experimental Social Psychology*, 49(6), 1210-1213. DOI: 10.1016/j.jesp.2013.05.008
- Ferguson, C. J., & Kilburn, J. (2009). The public health risks of media violence: A meta-analytic review. *The Journal of Pediatrics*, 154(5), 759-763.

- Florian, V., & Mikulincer, M. (1998). Symbolic immortality and the management of the terror of death: The moderating role of attachment style. *Journal of Personality and Social Psychology*, 74(3), 725-734.
- Fluke, S. M., Webster, R. J., & Saucier, D. A. (2014). Methodological and theoretical improvements in the study of superstitious beliefs and behaviour. *British Journal of Psychology*, 105(1), 102-126
- Fortuin, N. P., Schilderman, J. B., & Venbrux, E. (2018). Religion and fear of death among older Dutch adults. *Journal of Religion, Spirituality & Aging*, 31(3), 236-254.
- Francis, M. D. (2016). Why the “sacred” is a better resource than “religion” for understanding terrorism. *Terrorism and Political Violence*, 28(5), 912-927.
- Freud, S. (1920). *Beyond the pleasure principle* (Standard ed., Vol. 18). London: Hogarth.
- Friedman, J. P., & Jack, A. I. (2018). What makes you so sure? Dogmatism, fundamentalism, analytic thinking, perspective taking and moral concern in the religious and nonreligious. *Journal of Religion and Health*, 57(1), 157-190.
- Froming, W. J., Nasby, W., & McManus, J. (1998). Prosocial self-schemas, self-awareness, and children's prosocial behaviour. *Journal of Personality and Social Psychology*, 75(3), 766-777.
- Fukui, H., & Toyoshima, K. (2014). Chill-inducing music enhances altruism in humans. *Frontiers in Psychology*, 5, 1-9.
- Funk, K. (2001). What is a worldview? *Worldview essays*.  
<http://web.engr.oregonstate.edu/~funkk/Personal/worldview.html>
- Galen, L. (2017). Secular prosociality and well-being. *The Oxford Handbook of Secularism*, 533-553.

- Galen, L. W., & Kloet, J. D. (2011). Mental well-being in the religious and the non-religious: Evidence for a curvilinear relationship. *Mental Health, Religion & Culture, 14*(7), 673-689.
- George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviours at work. *Journal of Applied Psychology, 76*(2), 299.
- Gibson, M. (2007). Some thoughts on celebrity deaths: Steve Irwin and the issue of public mourning. *Mortality, 12*(1), 1-3. doi:10.1080/13576270601089663
- Giles, D. C., Pietrzykowski, S., & Clark, K. E. (2007). The psychological meaning of personal record collections and the impact of changing technological forms. *Journal of Economic Psychology, 28*(4), 429–443. <https://doi.org/10.1016/j.joep.2006.08.002>
- Goldman, D. P. (2009). Sacred music, sacred time. *First Things: A Monthly Journal of Religion and Public Life, 197*, 31-36.
- Graham, J., Haidt, J., Koleva, S., Motyl, M., Iyer, R., Wojcik, S. P., & Ditto, P. H. (2013). Moral foundations theory: The pragmatic validity of moral pluralism. In *Advances in Experimental Social Psychology* (Vol. 47, pp. 55-130). Academic Press.
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96*(5), 1029.
- Gray, K., & Keeney, J. E. (2015). Disconfirming moral foundations theory on its own terms: Reply to Graham (2015). *Social Psychological and Personality Science, 6*(8), 874-877.
- Greenaway, K. H., Louis, W. R., & Hornsey, M. J. (2013). Loss of control increases belief in precognition and belief in precognition increases control. *PloS one, 8*(8), e71327.
- Greenberg, D. M., Rentfrow, P. J., & Baron-Cohen, S. (2015). Can music increase empathy? interpreting musical experience through the empathizing–systemizing (ES) theory: implications for autism. *Empirical Musicology Review, 10*(1-2), 80-95.

- Greene, V. (1992). "Accessories of Holiness": Defining Jewish sacred objects. *Journal of the American Institute for Conservation*, 31(1), 31-39.
- Greene, C. A., & Murdock, K. K. (2013). Multidimensional control beliefs, socioeconomic status, and health. *American Journal of Health Behaviour*, 37(2), 227-237.
- Greitemeyer, T., Hollingdale, J., & Traut-Mattausch, E. (2015). Changing the track in music and misogyny: Listening to music with pro-equality lyrics improves attitudes and behaviour toward women. *Psychology of Popular Media Culture*, 4(1), 56.
- Greitemeyer, T. (2011). Exposure to music with prosocial lyrics reduces aggression: First evidence and test of the underlying mechanism. *Journal of Experimental Social Psychology*, 47(1), 28-36.
- Greitemeyer, T. (2009). Effects of songs with prosocial lyrics on prosocial thoughts, affect, and behaviour. *Journal of Experimental Social Psychology*, 45(1), 186-190.
- Gross, R. L. (1990). Heavy metal music: A new subculture in American society. *Journal of Popular Culture*, 24(1), 119.
- Guéguen, N., Jacob, C., & Lamy, L. (2010). 'Love is in the air': Effects of songs with romantic lyrics on compliance with a courtship request. *Psychology of Music*, 38(3), 303-307.
- Guibert, C., & Guibert, G. (2016). The social characteristics of the contemporary metalhead: the Hellfest survey. In Andy R Brown, Karl Spracklen, Keith Kahn-Harris and Siall W.R. Scott (Eds.), *Global metal music and culture: current directions in metal studies* (pp 167-189). New York, New York: Routledge.
- Guibert, C. (2014). Les filles au Hellfest. Socialisation, goûts et usages sociaux. In G. Guibert (dir.), *First French heavy metal et sciences sociales International Conference. For an overview of research in the Francophone World*, Angers, France, December 18 & 19.

- Guibert, G., Lambert, D., & Parent, E. (2009). Les comportements adolescents face à la musique. *Enquête auprès des collégiens et lycéens en Pays de Loire sur les musiques amplifiées et les risques auditifs.*
- Haidt, J. (2012). *The righteous mind: Why good people are divided by politics and religion.* New York, New York: Pantheon Books.
- Harding, S. R., Flannelly, K. J., Weaver, A. J., & Costa, K. G. (2005). The influence of religion on death anxiety and death acceptance. *Mental Health, Religion & Culture, 8(4), 253-261.*
- Hargreaves, D. J., & North, A. C. (1999). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music, 27(1), 71-83.*
- Harmon, J. T., & Dox, D. (2016). Spirituality, fan culture, and the music of Jerry Joseph & the Jackmormons. *Leisure Sciences, 38(3), 268-283.*  
doi:10.1080/01490400.2015.1092404
- Harris, K., & Howell, D., & Spurgeon, D. (2018). Faith concepts in psychology: three 30-year definitional content analyses. *Psychology of Religion and Spirituality, 10(1), 1-29.*
- Harris, K. (2000). 'Roots'?: the relationship between the global and the local within the Extreme Metal scene. *Popular Music, 19(1), 13-30.*
- Hartmann, T., Toz, E., & Brandon, M. (2010). Just a game? Unjustified virtual violence produces guilt in empathetic players. *Media Psychology, 13(4), 339-363.*
- Hartmann, T., & Vorderer, P. (2010). It's okay to shoot a character: Moral disengagement in violent video games. *Journal of Communication, 60(1), 94-119.*

- Hecker, P. (2016). *Turkish metal: Music, meaning, and morality in a Muslim society*. London: Routledge.
- Hein, F. (2003). *Hard rock, heavy metal, metal. Histoire, cultures et pratiquants*. Paris: Seteun.Irma.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Beyond WEIRD: Towards a broad-based behavioural science. *Behavioural and Brain Sciences*, 33(2-3), 111-135.
- Hernandez, K. M., Mahoney, A., & Pargament, K. I. (2011). Sanctification of sexuality: Implications for newlyweds' marital and sexual quality. *Journal of Family Psychology*, 25(5), 775–780. <https://doi.org/10.1037/a0025103>
- Hickam, B. (2014). Amalgamated anecdotes: Perspectives on the history of metal music and culture studies. *Metal Music Studies*, 1(1), 5-23.
- Hill, P. C., Pargament, K. I., Hood, R. W., McCullough, J. M. E., Swyers, J. P., Larson, D. B., & Zinnbauer, B. J. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour*, 30(1), 51-77.
- Hill, R. L. (2016). Masculine pleasure? Women's encounters with hard rock and metal music. *Global Metal Music and Culture: Current Directions in Metal Studies*. Routledge. 277-296.
- Hill, R. L. (2013). *Representations and experiences of women hard rock and metal fans in the imaginary community* (Doctoral dissertation, University of York). Retrieved from: [http://etheses.whiterose.ac.uk/4744/1/Hill\\_RL\\_Women\\_Hard\\_Rock\\_Metal\\_Fans\\_Imaginary\\_Community.pdf](http://etheses.whiterose.ac.uk/4744/1/Hill_RL_Women_Hard_Rock_Metal_Fans_Imaginary_Community.pdf)

- Hill, R. L. (2011). Is emo metal? Gendered boundaries and new horizons in the metal community. *Journal for Cultural Research, 15*(3), 297-313.
- Hjelm, T., Kahn-Harris, K., & LeVine, M. (2012). Heavy metal as controversy and counterculture. *Popular Music History, 6*(1), 5-18.
- Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the Implicit Association Test and explicit self-report measures. *Personality and Social Psychology Bulletin, 31*(10), 1369-1385.
- Homan, K. J., & Boyatzis, C. J. (2009). Body image in older adults: Links with religion and gender. *Journal of Adult Development, 16*(4), 230–238.  
<https://doi.org/10.1007/s10804-009-9069-8>
- Hooton, C. (2015, June 1). Metal fans are the most dedicated, Spotify data shows. It is the genre listeners are by far the most loyal to. *The Independent*. Retrieved from <https://www.independent.co.uk/arts-entertainment/music/news/metal-fans-are-the-most-dedicated-spotify-data-shows-10288416.html>
- Hopkins, N., Reicher, S. D., Khan, S. S., Tewari, S., Srinivasan, N., & Stevenson, C. (2016). Explaining effervescence: Investigating the relationship between shared social identity and positive experience in crowds. *Cognition and Emotion, 30*(1), 20-32.  
doi:10.1080/02699931.2015.1015969
- Horning, S. M., Davis, H. P., Stirrat, M., & Cornwell, R. E. (2011). Atheistic, agnostic, and religious older adults on well-being and coping behaviours. *Journal of Aging Studies, 25*(2), 177-188.
- Howe, T. R., Aberson, C. L., Friedman, H. S., Murphy, S. E., Alcazar, E., Vazquez, E. J., & Becker, R. (2015). Three decades later: the life experiences and mid-life functioning of 1980s heavy metal groupies, musicians, and fans. *Self and Identity, 14*(5), 602-626.

- Hungerman, D. M. (2011). *Substitution and stigma: evidence on religious competition from the catholic sex-abuse scandal* (No. w17589). National Bureau of Economic Research.
- Imprisoned As I Lay Dying singer claims Christian rock bands fake faith. (2014, June 23). *The Guardian*. Retrieved from <https://www.theguardian.com/music/2014/jun/23/as-i-lay-dying-singer-tim-lambesis-christian-rock-bands-fake-faith>
- Introvigne, M. (2018). "I worship death, evil, and all darkness": Black metal and satanism. *La Rosa di Paracelso*, (2), 11-27.
- Iurino, K., & Saucier, G. (2018). Testing measurement invariance of the Moral Foundations Questionnaire across 27 countries. *Assessment*, 1073191118817916.
- Jacob, C., Guéguen, N., & Boulbry, G. (2010). Effects of songs with prosocial lyrics on tipping behaviour in a restaurant. *International Journal of Hospitality Management*, 29(4), 761-763.
- Jacobson, H. L., Hall, M. E. L., & Anderson, T. L. (2013). Theology and the body: Sanctification and bodily experiences. *Psychology of Religion and Spirituality*, 5(1), 41–50. <https://doi.org/10.1037/a0028042>
- Jackson, J. C., Jong, J., Bluemke, M., Poulter, P., Morgenroth, L., & Halberstadt, J. (2018). Testing the causal relationship between religious belief and death anxiety. *Religion, Brain & Behaviour*, 8(1), 57-68.
- James, W. (1902). *The varieties of religious experience*. New York, NY: Simon & Schuster
- Jerotijević, D., & Hagovská, M. (2019). The role of group experience in alternative spiritual gatherings. *Human Affairs*, 29(1), 48-62.



- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.
- Jones, J. W. (1991). *Contemporary psychoanalysis and religion: Transference and transcendence*. Vale University Press.
- Johnson, K. A., Hill, E. D., & Cohen, A. B. (2011). Integrating the study of culture and religion: Toward a psychology of worldview. *Social and Personality Psychology Compass*, 5(3), 137-152. doi:10.1111/j.1751-9004.2010.00339.x
- Johnston, L. (2018). Worldview Analysis in a Comparative Context: Fishing for Data in Muddy Waters. *Religions*, 9(9), 261.
- Jong, J., Ross, R., Philip, T., Chang, S. H., Simons, N., & Halberstadt, J. (2018). The religious correlates of death anxiety: A systematic review and meta-analysis. *Religion, Brain & Behaviour*, 8(1), 4-20.
- Joye, Y., & Bolderdijk, J. W. (2015). An exploratory study into the effects of extraordinary nature on emotions, mood, and prosociality. *Frontiers in Psychology*, 5, 1577.
- Kadar, J. L., Scott, A. B., Hipp, K., Belavich, T. G., Butfer, E. M., Rye, M. S., ... & Zinnbauer, B. J. (2015). Religion and spirituality: Unfuzzifying the fuzzy. *Sociology of Religion*, 4(36), pp. 29-34.
- Kahn-Harris (2007). *Extreme metal: music and culture on the edge*. Oxford: Berg.
- Kahn-Harris, K., & Moberg, M. (2012). Religious popular music: Between the instrumental, transcendent and transgressive. *Temenos-Nordic Journal of Comparative Religion*, 48(1), 87-106.

- Karim, J., Weisz, R., Bibi, Z., & ur Rehman, S. (2015). Validation of the eight-item center for epidemiologic studies depression scale (CES-D) among older adults. *Current Psychology, 34*(4), 681-692.
- Karjalainen, T. M., & Sipilä, E. (2016). 12 tunes from the Land of the Thousand Lakes. In Andy R. Brown, Karl Spracken, Keith Kahn-Harris, & Nial Scott (Eds.) *Global Metal Music and Culture: Current Directions in Metal Studies*, Routledge. 209-226.
- Kesebir, P. (2009). *Perceiving the world in sacred terms: Its buffering function against death anxiety* (Doctoral dissertation, University of Illinois at Urbana-Champaign). Retrieved from Dissertations Publishing, 2009. 3392086.
- Keysar, A., & Navarro-Rivera, J. (2013). A World of Atheism: Global Demographics. The *Oxford Handbook of Atheism*, 553-586.
- Kiilakoski, T., & Oksanen, A. (2011). Soundtrack of the school shootings: Cultural script, music and male rage. *Young, 19*(3), 247-269.
- Kirkpatrick, L. A., Shillito, D. J., & Kellas, S. L. (1999). Loneliness, social support, and perceived relationships with God. *Journal of Social and Personal Relationships, 16*(4), 513-522.
- Kirschner, S., & Tomasello, M. (2010). Joint music making promotes prosocial behaviour in 4-year-old children. *Evolution and Human Behaviour, 31*(5), 354-364.
- Kneer, J., & Rieger, D. (2016). The memory remains: How heavy metal fans buffer against the fear of death. *Psychology of Popular Media Culture, 5*(3), 258-272.  
doi:10.1037/ppm0000072
- Knott, K., Poole, E., & Taira, T. (2016). *Media portrayals of religion and the secular sacred: Representation and change*. Routledge: New York, NY.

- Knott, K. (2013). The secular sacred: in-between or both/and? *Social identities between the sacred and the secular*, Ashgate: 145-160.
- Knott, K. (2010). Specialness and the sacred: Ann Taves, religious experience reconsidered. *Religion*, 40(4), 305-307.
- Krcmar, M., & Cingel, D. P. (2016). Moral foundations theory and moral reasoning in video game play: Using real-life morality in a game context. *Journal of Broadcasting & Electronic Media*, 60(1), 87-103.
- Krcmar, M., & Kean, L. G. (2005). Uses and gratifications of media violence: Personality correlates of viewing and liking violent genres. *Media Psychology*, 7(4), 399-420.
- Krull, D. S. (2016). Religiosity and moral foundations: differing views about the basis of right and wrong. *Journal of Psychology and Christianity*, 35(1), 41.
- Krumrei, E. J., Mahoney, A., & Pargament, K. I. (2011). Spiritual stress and coping model of divorce: A longitudinal study. *Journal of Family Psychology*, 25(6), 973–985.  
<https://doi.org/10.1037/a0025879>
- Kusner, K. G., Mahoney, A., Pargament, K. I., & DeMaris, A. (2014). Sanctification of marriage and spiritual intimacy predicting observed marital interactions across the transition to parenthood. *Journal of Family Psychology*, 28(5), 604–614.  
<https://doi.org/10.1037/a0036989>
- Labbé, E., Schmidt, N., Babin, J., & Pharr, M. (2007). Coping with stress: The effectiveness of different types of music. *Applied Psychophysiology and Biofeedback*, 32(3-4), 163-168. doi:10.1007/s10484-007-9043-9
- Ladd, K. L., & Messick, K. J. (2016). A brief history of the psychological study of the role(s) of religion. In W. Woody, R. Miller, & W. Wozniak (Eds.), *Psychological specialties in historical context: Enriching the classroom experience for teachers and students*

- (pp. 204-216). Division 2, American Psychological Association. Retrieved from <https://teachpsych.org/ebooks/psychspec>
- Ladd, K. L., & Spilka, B. (2002). Inward, outward, and upward: Cognitive aspects of prayer. *Journal for the Scientific Study of Religion*, 41(3), 475-484.
- Laiho, S. (2004). The psychological functions of music in adolescence. *Nordic Journal of Music Therapy*, 13(1), 47–63. <https://doi.org/10.1080/08098130409478097>
- LaMothe, R. (1998). Sacred objects as vital objects: Transitional objects reconsidered. *Journal of Psychology and Theology*, 26(2), 159-167.
- Lang, M., Mitkidis, P., Kundt, R., Nichols, A., Krajčíková, L., & Xygalatas, D. (2016). Music as a sacred cue? Effects of religious music on moral behaviour. *Frontiers in Psychology*, 7, 814.
- Larsson, S. (2013). ‘I bang my head, therefore I am’: Constructing individual and social authenticity in the heavy metal subculture. *Young*, 21(1), 95-110.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press on Demand.
- Lazarus, R. S.(1984). *On the primacy of cognition*. *American Psychologist*, 39, 124-129.
- Leonhardt, N. D., Busby, D. M., & Willoughby, B. J. (2019). Sex guilt or sanctification? The indirect role of religiosity on sexual satisfaction. *Psychology of Religion and Spirituality*. Advance online publication. <http://dx.doi.org/10.1037/rel0000245>
- LeVine, M. (2009). *Headbanging against repressive regimes: Censorship of heavy metal in the Middle East, North Africa, Southeast Asia and China*. Freemuse.
- LeVine, M. (2009). Doing the devil’s work: Heavy metal and the threat to public order in the Muslim world. *Social Compass*, 56(4), 564-576.

- LeVine, M. (2008). Heavy metal Muslims: the rise of a post-Islamist public sphere. *Contemporary Islam*, 2(3), 229-249.
- Lewisohn, L. (1997). The sacred music of Islam: Samā' in the Persian Sufi tradition. *British Journal of Ethnomusicology*, 6(1), 1-33.
- Lindskoog, D., & Kirk, R. E. (1975). Some life-history and attitudinal correlates of self-actualization among evangelical seminary students. *Journal for the Scientific Study of Religion*, 51-55.
- Loewen, P. J., Lyle, G., & Nachshen, J. S. (2009). An eight-item form of the Empathy Quotient (EQ) and an application to charitable giving. Retrieved from *crcee.umontreal.ca/pdf/Eight%20Question%20ES\_final.pdf*.
- Lonsdale, A. J., & North, A. C. (2009). Musical taste and ingroup favouritism. *Group Processes & Intergroup Relations*, 12(3), 319-327.
- Low, M., & Wui, M. G. L. (2016). Moral foundations and attitudes towards the poor. *Current Psychology*, 35(4), 650-656.
- Lewis, M. J., & Hughes, J. (1997). A comparison of the effects of sacred and secular music on elderly people. *The Journal of Psychology: Interdisciplinary and Applied*, 131(1), 45-55. <https://doi.org/10.1080/00223989709603503>
- Luckey, J. R. (2008). The United States flag: Federal law relating to display and associated questions. *CRS Report for Congress*.  
<https://www.senate.gov/reference/resources/pdf/RL30243.pdf>
- Luhr, E. (2005). Metal missionaries to the nation: Christian heavy metal music, "family values," and youth culture, 1984-1994. *American Quarterly*, 57(1), 103-128.

- Lundmark, M. (2016). Sanctification of health care interventions as a coping method. *Research in the Social Scientific Study of Religion*, 27, 1–23.
- Lyden, J. (2009). *Introduction*. In: Lyden J (ed.) *The Routledge Companion to Religion and Film*. London: Routledge, pp. 1–10.
- Lynxwiler, J. & Gay, D. (2000). Moral boundaries and deviant music: Public attitudes toward heavy metal and rap. *Deviant Behaviour*, 21(1), 63-85.
- Magyar, G. M., Pargament, K. I., and Mahoney, A. (2000). *Violation of the sacred: A study of desecration among college students*. Paper presented at the Annual Meeting of the American Psychological Association, Washington, DC.
- Mahoney, A., Carels, R. A., Pargament, K. I., Wachholtz, A., Edwards Leeper, L., Kaplar, M., & Frutchey, R. (2005). The Sanctification of the Body and Behavioural Health Patterns of College Students. *The International Journal for the Psychology of Religion*, 15(3), 221-238.
- Mahoney, A., Pargament, K. I., & Hernandez, K. M. (2013). Heaven on earth: Beneficial effects of sanctification for individual and interpersonal well-being. In S. A. David, I. Boniwell, & A. Conley Ayers (Eds.), *The Oxford Handbook of Happiness* (pp. 397-410). New York, NY, US: Oxford University Press.
- Mahoney, A., Pargament, K. I., Murray-Swank, A., & Murray-Swank, N. (2003). Religion and the sanctification of family relationships. *Review of Religious Research*, 220-236.
- Mahoney, A., Carels, R. A., Pargament, K. I., Wachholtz, A., Edwards Leeper, L., Kaplar, M., & Frutchey, R. (2005). The sanctification of the body and behavioural health patterns of college students. *The International Journal for the Psychology of Religion*, 15(3), 221-238.

- Mahoney, A., Rye, M. S., & Pargament, K. I. (2005). When the sacred is violated: Desecration as a unique challenge to forgiveness. In Everett L. Worthington Jr. (Ed.), *Handbook of forgiveness*, (pp 57-72). New York: Routledge.
- Mahoney, A., Pargament, K. I., Jewell, T., Swank, A. B., Scott, E., Emery, E., & Rye, M. (1999). Marriage and the spiritual realm: The role of proximal and distal religious constructs in marital functioning. *Journal of Family Psychology*, *13*, 321–338.
- Mahoney, A., Pargament, K. I., Cole, B., Jewell, T., Magyar, G. M., Tarakeshwar, N., ... & Phillips, R. (2005). A higher purpose: The sanctification of strivings in a community sample. *The International Journal for the Psychology of Religion*, *15*(3), 239-262.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, *4*(4), 277.
- Martos, T., Kézdy, A., & Horváth-Szabó, K. (2011). Religious motivations for everyday goals: Their religious context and potential consequences. *Motivation and Emotion*, *35*(1), 75-88. doi:10.1007/s11031-010-9198-1
- Maslow (1943). A preface to motivation theory. *Psychosomatic Med.*, *5*, 85-92.
- McCain, J., Gentile, B., & Campbell, W. K. (2015). A psychological exploration of engagement in geek culture. *PloS one*, *10*(11), e0142200.
- McLucas, A. D. (2017). The music of the Mescalero Apache girls' puberty ceremony, *Indigenous religious musics*. Routledge., 198-209.
- Meij, J. M., Probstfield, M. D., Simpson, J. M., & Knottnerus, J. D. (2016). Moving past violence and vulgarity: Structural ritualization and constructed meaning in the heavy metal subculture. In Sarah Towe Horsefall, Jan-Martin Meij, & Meghan D. Probstfield. (Eds), *Music Sociology* (pp. 84-93). New York, New York: Routledge.

- Mendoza, S., Varas-Diaz, N., Rivera-Segarra, E., & Velez, C. (2018). Media representations of metal music in the Dominican Republic: Between oppression and social resistance. *Metal Music Studies*, 4(1), 197-208.
- Merica, D. (2013). Poll: quarter of Americans say God influences sporting events. CNN, <http://religion.blogs.cnn.com/2013/01/29/poll-quarter-of-americans-say-god-influences-sporting-events/>
- Messick, K. J., Aranda, B., & Day, C. (2019). The experiences of metal fans with mental and developmental disorders in the metal music community. Preprint available via *OSF Preprints*. DOI: 10.31219/osf.io/tz7gh
- Messick, K., & Farias, M. (2019). The psychology of leaving religion. *Brill Handbook of Leaving Religion*, edited by Daniel Enstedt, Göran Larsson, and Teemu T. Mantsinen (pp. 307-322). Leiden: Brill.
- Millard, D. (2014, June 16). Watain covered an artisanal flea market in the stench and fluids of death. Retrieved from [https://noisey.vice.com/en\\_us/article/watain-live-review-brooklyn](https://noisey.vice.com/en_us/article/watain-live-review-brooklyn).
- Miranda, D., & Claes, M. (2009). Music listening, coping, peer affiliation and depression in adolescence. *Psychology of Music*, 37(2), 215-233.
- Moberg, M. (2015). *Christian metal: History, ideology, scene*. London: Bloomsbury Publishing.
- Moberg, M. (2012). Religion in popular music or popular music as religion? A critical review of scholarly writing on the place of religion in metal music and culture. *Popular Music and Society*, 35(1), 113-130.
- Moretti, E. & Alvi, S. (2007). *Heavy metal in Baghdad*. Documentary distributed by VBS.tv



- Morris, M. (2014). Negative dialectics in music: Adorno and heavy metal. *European Journal of Cultural Studies*, 17(5), 549-566.
- Morselli, D., & Passini, S. (2015) Measuring prosocial attitudes for future generations: The SocialGenerativity Scale. *Journal of Adult Development*, 22(3), 173-182.
- Mudrian, A. (2009). *Precious Metal: Decibel Presents the Stories Behind 25 Extreme Metal Masterpieces*. Da Capo Press.
- Mulder, J., Ter Bogt, T. F., Raaijmakers, Q. A., Gabhainn, S. N., Monshouwer, K., & Vollebergh, W. A. (2009). The soundtrack of substance use: music preference and adolescent smoking and drinking. *Substance Use & Misuse*, 44(4), 514-531.
- Murphy, J. (2017). Beyond “religion” and “spirituality”: Extending a “meaning systems” approach to explore lived religion. *Archive for the Psychology of Religion*, 39(1), 1-26.
- Murray-Swank, A., Mahoney, A., & Pargament, K. I. (2006). Sanctification of parenting: Links to corporal punishment and parental warmth among biblically conservative and liberal mothers. *International Journal for the Psychology of Religion*, 16(4), 271–287. [https://doi.org/10.1207/s15327582ijpr1604pass:\[\\_\]3](https://doi.org/10.1207/s15327582ijpr1604pass:[_]3)
- Murray-Swank, N. A., Pargament, K. I., & Mahoney, A. (2005). At the crossroads of sexuality and spirituality: The sanctification of sex by college students. *The International Journal for the Psychology of religion*, 15(3), 199-219.
- Négrier, E., Djakouane, A., & Collin, J. D. (2012). Un territoire de rock. *Le(s) public(s) de Eurockéennes de Belfort*. Paris: L’Harmattan.
- Nemeroff, C., & Rozin, P. (1994). The contagion concept in adult thinking in the United States: Transmission of germs and of interpersonal influence. *Ethos*, 22(2), 158-186.
- Olson, B. H. (2008). *I am the black wizards: Multiplicity, mysticism and identity in black metal music and culture* (Doctoral dissertation, Bowling Green State University).

Retrieved from

[https://etd.ohiolink.edu/!etd.send\\_file?accession=bgsu1206132032&disposition=inline](https://etd.ohiolink.edu/!etd.send_file?accession=bgsu1206132032&disposition=inline)

- Olsen, K. N., Thompson, W. F., & Giblin, I. (2018). Listener expertise enhances intelligibility of vocalizations in death metal music. *Music Perception: An Interdisciplinary Journal*, 35(5), 527-539.
- Ollivier, R., Goupil, L., Liuni, M., & Aucouturier, J. J. (2019). Enjoy The Violence: Is appreciation for extreme music the result of cognitive control over the threat response system? Hal Archives: hal-02004459f
- Osbaldiston, N., & Petray, T. (2011). The role of horror and dread in the sacred experience. *Tourist Studies*, 11(2), 175-190.
- Otto, R. (1923). 1958. The idea of the holy. *Trans. John W. Harvey. London: Oxford University Press.*
- Oviedo, L., de Courcier, S., & Farias, M. (2014). Rise of pilgrims on the camino to Santiago: Sign of change or religious revival?. *Review of Religious Research*, 56(3), 433-442.
- Paloutzian, R. F., & Park, C. L. (2005). Integrative themes in the current science of the psychology of religion. *Handbook of the Psychology of Religion and Spirituality*, 1, 3-20.
- Paloutzian, R. F., & Park, C. L. (2013). Recent progress and core issues in the science of the psychology of religion and spirituality. *Handbook of the Psychology of Religion and Spirituality*, 2, 3-22.
- Pandya, S. (2015). Pilgrimage and devotion to the divine mother: Mental well-being of devotees of Mata Vaishno Devi. *Mental Health, Religion & Culture*, 18(9), 726-737.  
doi:10.1080/13674676.2015.1112771

- Pargament, K. I., & Mahoney, A. (2005). THEORY: Sacred matters: sanctification as a vital topic for the psychology of religion. *The International Journal for the Psychology of Religion, 15*(3), 179-198.
- Pargament, K. I., & Mahoney, A. (2005). Discovering and conserving the sacred. In C.R. Snyder & Shane J. Lopez (Eds.), *Handbook of positive psychology* (pp 646-659). New York: Oxford University Press.
- Pargament, K. I., Magyar-Russell, G. M., & Murray-Swank, N. A. (2005). The sacred and the search for significance: Religion as a unique process. *Journal of Social Issues, 61*(4), 665-687.
- Pargament, K. I., Magyar, G. M., Benore, E., & Mahoney, A. (2005). Sacrilege: A study of sacred loss and desecration and their implications for health and well-being in a community sample. *Journal for the Scientific Study of Religion, 44*(1), 59-78.
- Pargament, K. I., Oman, D., Pomerleau, J., & Mahoney, A. (2017). Some contributions of a psychological approach to the study of the sacred. *Religion, 47*(4), 718-744.
- Parra, M. D. P. G. (2009). Music therapy intervention to promote prosociality and to reduce the risk of aggression in children of primary basic and preschool in Bogota, Colombia. *International Journal of Psychological Research, 2*(2), 128-136.
- Pasbani, R. (2019, February 20). Gary Holt slams Kim Kardashian over “rip off designs” complaint. Retrieved from <https://metalinjection.net/fashion/gary-holt-slams-kim-kardashian-over-rip-off-designs-complaint>
- Patterson, J. (2016). Getting my soul back: Empowerment narratives and identities among women in extreme metal in North Carolina. In Andy R. Brown, Karl Spracklen, Keith Kahn-Harris, & Niall Scott (Eds). *Global metal music and culture: Current directions in metal studies* (pp 245-260) Routledge.

- Paterson, B., & Stark, C. (2001). Social policy and mental illness in England in the 1990s: violence, moral panic and critical discourse. *Journal of Psychiatric and Mental Health Nursing*, 8(3), 257-267.
- Pavey, L., Greitemeyer, T., & Sparks, P. (2011). Highlighting relatedness promotes prosocial motives and behaviour. *Personality and Social Psychology Bulletin*, 37(7), 905-917.
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behaviour: Multilevel perspectives. *Annu. Rev. Psychol.*, 56, 365-392.
- Pew Research Center. (2015). *Religious nones and not only growing they're becoming more secular*. Retrieved from <http://www.pewresearch.org/fact-tank/2015/11/11/religious-nones-are-not-only-growing-theyrebecoming-more-secular/>
- Pfattheicher, S., & Keller, J. (2015). The watching eyes phenomenon: The role of a sense of being seen and public self-awareness. *European Journal of Social Psychology*, 45(5), 560-566.
- Pfeifer, S., & Waelti, U. (1995). Psychopathology and religious commitment: A controlled study. *Psychopathology*, 28, 70-77.
- Phillipov, M. (2011). Extreme music for extreme people? Norwegian black metal and transcendent violence. *Popular Music History*, 6(1-2), 150-163.
- Phillips III, R. E., Avant, S., Kalp, D., Cenkner, D., Lucci, M., Herndon, R., & Maccarelli, A. (2017). Initial validation of measures of sanctification in same-sex romantic relationships and sexual behaviour. *Journal for the Scientific Study of Religion*, 56(4), 836-851.
- Phillips III, R. E., & Pargament, K. I. (2002). The sanctification of dreams: Prevalence and implications. *Dreaming*, 12(3), 141-153. <https://doi.org/10.1023/A:1020166208750>

- Phillips III, R. E., & Kitchens, M. B. (2016). Augustine or Philistine? College students' sanctification of learning and its implications. *International Journal for the Psychology of Religion, 26*(1), 80–94. <https://doi.org/10.1080/10508619.2014.999492>
- Phillips, D. J., & Owens, D. A. (2004). Incumbents, innovation, and competence: The emergence of recorded jazz, 1920 to 1929. *Poetics, 32*(3-4), 281-295.
- Pichon, I., Boccatto, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology, 37*(5), 1032-1045.
- Pieschl, S., & Fegers, S. (2016). Violent lyrics= aggressive listeners? Effects of song lyrics and tempo on cognition, affect, and self-reported arousal. *Journal of Media Psychology: Theories, Methods, and Applications, 28*(1), 32.
- Podoshen, J. S., Andrzejewski, S. A., Wallin, J., & Venkatesh, V. (2018). Consuming abjection: an examination of death and disgust in the black metal scene. *Consumption Markets & Culture, 21*(2), 107-128.
- Podoshen, J. S., Venkatesh, V., & Jin, Z. (2014). Theoretical reflections on dystopian consumer culture: Black metal. *Marketing Theory, 14*(2), 207-227.
- Polzer, E. (2017). *Mosh pits and mental health: metal communities and emerging adults' well-being*. (Doctoral dissertation, Colorado State University. Libraries). Retrieved from <https://pdfs.semanticscholar.org/d2bb/588927b9f368c53fa0dfc34a156bac2ca31e.pdf>
- Prince, S. A., Adamo, K. B., Hamel, M. E., Hardt, J., Gorber, S. C., & Tremblay, M. (2008). A comparison of direct versus self-report measures for assessing physical activity in adults: a systematic review. *International Journal of Behavioural Nutrition and Physical Activity, 5*(1), 1-24.

- Rabinowitch, T. C., Cross, I., & Burnard, P. (2013). Long-term musical group interaction has a positive influence on empathy in children. *Psychology of Music, 41*(4), 484-498.
- Recours, R., Aussaguel, F., & Trujillo, N. (2009). Metal music and mental health in France. *Culture, Medicine and Psychiatry, 33*(3), 473-488. doi:10.1007/s11013-009-9138-2
- Riches, G. (2015). From cultural politics to pleasurable affects: Female metal scholarship's contribution to metal studies (Reviews). *Metal Music Studies, 1*(1), 171-176.
- Riches, G. (2011). Embracing the chaos: Mosh pits, extreme metal music and liminality. *Journal for Cultural Research, 15*(3), 315-332.
- Riches, G. (2012). 'Caught in a mosh': moshpit culture, extreme metal music, and the reconceptualization of leisure (Master's thesis, University of Alberta, Edmonton Alberta, Canada). Retrieved from [https://era.library.ualberta.ca/items/10209a3d-118a-4312-bfd5-33e82bb9e2d2/view/f3e8d44e-f8c1-4079-aa46-a7331e618e92/uuid\\_44d56b8b-3fc0-4edb-9a02-33ecb2ca5c73+DS1+DS1.pdf](https://era.library.ualberta.ca/items/10209a3d-118a-4312-bfd5-33e82bb9e2d2/view/f3e8d44e-f8c1-4079-aa46-a7331e618e92/uuid_44d56b8b-3fc0-4edb-9a02-33ecb2ca5c73+DS1+DS1.pdf)
- Riches, G., Lashua, B., & Spracklen, K. (2013). Female, mosher, transgressor: A'moshography'of transgressive practices within the Leeds extreme metal scene. *IASPM@ Journal, 4*(1), 87-100.
- Righetti, N. (2014). The sacred in current social sciences research. *Italian Sociological Review, 4*(1), 133-163.
- Roof, W. C., & Perkins, R. B. (1975). On conceptualizing salience in religious commitment. *Journal for the Scientific Study of Religion, 14*(2), 111-128.
- Rosenbaum, E., Garlan, R. W., Hirschberger, N., Siegel, A. L., Butler, L. D., & Spiegel, D. (2006). The Life Tape Project: Increasing family social support and symbolic

- immortality with a brief existential intervention for cancer patients and their families. *Omega-Journal of Death and Dying*, 53(4), 321-339.
- Rozin, P., & Nemeroff, C. (2002). Sympathetic magical thinking: The contagion and similarity “heuristics “. *Heuristics and biases the psychology of intuitive judgment*. Cambridge University Press, 201-216.
- Rusu, P. P., Hilpert, P., Beach, S. R. H., Turliuc, M. N., & Bodenmann, G. (2015). Dyadic coping mediates the association of sanctification with marital satisfaction and well-being. *Journal of Family Psychology*, 29(6), 843–849.  
<https://doi.org/10.1037/fam0000108>
- Ruth, N. (2017). “Heal the World”: A field experiment on the effects of music with prosocial lyrics on prosocial behaviour. *Psychology of Music*, 45(2), 298-304.
- Rutjens, B. T., van Harreveld, F., van der Pligt, J., van Elk, M., & Pyszczynski, T. (2016). A march to a better world? Religiosity and the existential function of belief in social-moral progress. *The International Journal for the Psychology of Religion*, 26(1), 1-18.
- Rutjens, B. T., van Harreveld, F., & van der Pligt, J. (2010). Yes we can: Belief in progress as compensatory control. *Social Psychological and Personality Science*, 1(3), 242-252.  
doi:10.1177/1948550610361782
- Rutjens, B. T., van der Pligt, J., & van Harreveld, F. (2009). Things will get better: The anxiety-buffering qualities of progressive hope. *Personality and Social Psychology Bulletin*, 35(5), 535-543.
- Sanders, P. W., Allen, G. K., Fischer, L., Richards, P. S., Morgan, D. T., & Potts, R. W. (2015). Intrinsic religiousness and spirituality as predictors of mental health and positive psychological functioning in Latter-day Saint adolescents and young adults. *Journal Of Religion And Health*, 54(3), 871-887. doi:10.1007/s10943-015-0043-4

- Saucier, G., & Skrzypińska, K. (2006). Spiritual but not religious? Evidence for two independent dispositions. *Journal of Personality, 74*(5), 1257-1292.
- Saroglou, V., & Anciaux, L. (2004). Liking sick humor: Coping styles and religion as predictors. *Humor, 17*(3), 257-278.
- Saroglou, V., Pichon, I., Trompette, L., Verschueren, M., & Dernelle, R. (2005). Prosocial behaviour and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion, 44*(3), 323-348.
- Schäfer, T., Sedlmeier, P., Städtler, C., & Huron, D. (2013). The psychological functions of music listening. *Frontiers in Psychology, 4*, 1-33.
- Schellenberg, E. G., Corrigan, K. A., Dys, S. P., & Malti, T. (2015). Group music training and children's prosocial skills. *PLoS One, 10*(10), e0141449.
- Schnell, T., & Keenan, W. J. (2013). The construction of atheist spirituality: A survey-based study. *Constructs of Meaning and Religious Transformation: Current Issues in the Psychology of Religion (Religion and Transformation in Contemporary European Society)*, 101-118.
- Schnell, T., & Keenan, W. J. (2011). Meaning-making in an atheist world. *Archive for the Psychology of Religion, 33*(1), 55-78.
- Schnell, T. (2015). Dimensions of Secularity (DoS): An open inventory to measure facets of secular identities. *The International Journal for the Psychology of Religion, 25*(4), 272-292.
- Schnell, T., & Pali, S. (2013). Pilgrimage today: The meaning-making potential of ritual. *Mental Health, Religion & Culture, 16*(9), 887-902.
- doi:10.1080/13674676.2013.766449



- Sedikides, C., & Gebauer, J. E. (2010). Religiosity as self-enhancement: A meta-analysis of the relation between socially desirable responding and religiosity. *Personality and Social Psychology Review, 14*(1), 17-36.
- Shariff, A. F., Willard, A. K., Andersen, T., & Norenzayan, A. (2016). Religious priming: A meta-analysis with a focus on prosociality. *Personality and Social Psychology Review, 20*(1), 27-48.
- Sharman, L., & Dingle, G. A. (2015). Extreme metal music and anger processing. *Frontiers in Human Neuroscience, 9*, 1-11.
- Shelemay, K. K. (1982). Zēmā: A Concept of Sacred Music in Ethiopia. *The World of Music, 24*(3), 52-67.
- Shor, E., & Roelfs, D. J. (2013). The longevity effects of religious and nonreligious participation: A meta-analysis and meta-regression. *Journal for the Scientific Study of Religion, 52*(1), 120-145.
- Silver, C. F., Coleman III, T. J., Hood Jr, R. W., & Holcombe, J. M. (2014). The six types of nonbelief: A qualitative and quantitative study of type and narrative. *Mental Health, Religion & Culture, 17*(10), 990-1001.
- Silverstone, R. (1999). *Why study the media?* London: Sage
- Sinclair, G. (2011). Heavy metal rituals and the civilising process. *Can I play with madness*, 93-100.
- Sisario, B. (2009, February 2). One band moves its metal out of Iraq. *The New York Times*. Retrieved from <https://www.nytimes.com/2009/02/03/arts/music/03metal.html>
- Smith, J. M. (2017). Can the secular be the object of belief and belonging? The Sunday assembly. *Qualitative Sociology, 40*(1), 83-109.

- Smith, J. M. (2013). Creating a godless community: The collective identity work of contemporary American atheists. *Journal for the Scientific Study of Religion, 52*(1), 80-99.
- Smith, C., & Cimino, R. (2012). Atheism unbound: The role of new media in the formation of a secularist identity. *Secularism and Nonreligion, 1*, 17-31.
- Smith, J. M., & Cragun, R. T. (2019). Mapping Religion's Other: A Review of the Study of Nonreligion and Secularity. *Journal for the Scientific Study of Religion, 00*(0): 1-17.
- Smith, J. M. (2011). Becoming an atheist in America: Constructing identity and meaning from the rejection of theism. *Sociology of Religion, 72*(2), 215-237.
- Smith, T. B., McCullough, M. E., & Poll, J. (2003). Religiousness and depression: evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin, 129*(4), 614-636.
- Snell, D., & Hodgetts, D. (2007). Heavy metal, identity and the social negotiation of a community of practice. *Journal of Community & Applied Social Psychology, 17*(6), 430-445.
- Soenke, M., Landau, M. J., & Greenberg, J. (2013). Sacred armor: Religion's role as a buffer against the anxieties of life and the fear of death. *APA handbook of psychology, religion, and spirituality, 1*, 105-122.
- Sosis, R., Phillips, E. J., & Alcorta, C. S. (2012). Sacrifice and sacred values: Evolutionary perspectives on religious terrorism. *Oxford Handbook of Evolutionary Perspectives on Violence, Homicide, and War, 233-253*.
- Sousa, M. D. R., Neto, F., & Mullet, E. (2005). Can music change ethnic attitudes among children?. *Psychology of Music, 33*(3), 304-316.

- Speed, D., Coleman III, T. J., & Langston, J. (2018). What do you mean, “What does It all mean?” *Atheism, Nonreligion, and Life Meaning*, 8(1), 1-13.
- Spielberger, C. D. (1991). State-trait anger expression inventory, revised research edition, professional manual. Odessa, FL: Psychological Assessment Resources.
- Spilka, B., & Ladd, K. L. (2012). *The psychology of prayer: A scientific approach*. Guilford Press.
- Spracklen, K. (2018). Sex, drugs, Satan and rock and roll: re-thinking dark leisure, from theoretical framework to an exploration of pop-rock-metal music norms. *Annals of Leisure Research*, 21(4), 407-423.
- Spracklen, K. and Brown, A.R. and Kahn-Harris, K. (2011). Metal studies? Cultural research in the heavy metal scene. *Journal for Cultural Research*, 15(3): 209-212.
- Spracklen, K., Lucas, C., & Deeks, M. (2014). The construction of heavy metal identity through heritage narratives: A case study of extreme metal bands in the North of England. *Popular Music and Society*, 37(1), 48-64.
- Steg, L., & De Groot, J. (2010). Explaining prosocial intentions: Testing causal relationships in the norm activation model. *British journal of social psychology*, 49(4), 725-743.
- Stavrova, O., Ehlebracht, D., & Fetchenhauer, D. (2016). Belief in scientific–technological progress and life satisfaction: The role of personal control. *Personality and Individual Differences*, 96, 227-236.
- Steger, M. F., & Frazier, P. (2005). Meaning in life: One link in the chain from religiousness to well-being. *Journal of Counseling Psychology*, 52(4), 574-582.
- Stewart, F. E. (2011). *"Punk rock is my religion": An exploration of straight edge punk as a Surrogate of Religion*. (Doctoral dissertation, to University of Stirling, Stirling,

- Scotland). Retrieved from  
<https://dspace.stir.ac.uk/bitstream/1893/3441/1/phd%20complete.pdf>
- Strachan, D. L. (2015). The space between the notes: the effects of background music on student focus. *Masters of Arts in Education Action Research Papers*. Paper 118.
- Sun, Y., Lu, X., Williams, M., & Thompson, W. F. (2019). Implicit violent imagery processing among fans and non-fans of music with violent themes. *Royal Society Open Science*, 6(3), 181580.
- Stupacher, J., Maes, P.-J., Witte, M., & Wood, G. (2017). Music strengthens prosocial effects of interpersonal synchronization—If you move in time with the beat. *Journal of Experimental Social Psychology*, 72, 39–44.  
<https://doi.org/10.1016/j.jesp.2017.04.007>
- Sturesteps, V. A. (2013). *The concept and psychological consequences of symbolic immortality* (Master's thesis, Australian National University, Canberra, Australia). Retrieved from: [https://openresearch-repository.anu.edu.au/bitstream/1885/10581/2/02Whole\\_Sturesteps.pdf](https://openresearch-repository.anu.edu.au/bitstream/1885/10581/2/02Whole_Sturesteps.pdf)
- Subbotsky, E., & Quinteros, G. (2002). Do cultural factors affect causal beliefs? Rational and magical thinking in Britain and Mexico. *British Journal of Psychology*, 93(4), 519–543.
- Sun, Y., Lu, X., Williams, M., & Thompson, W. (2019). Implicit violent imagery processing among fans and non-fans of music with violent themes. *Royal Society Open Science*. 6(3): 181580. <http://dx.doi.org/10.1098/rsos.181580>
- Swami, V., Malpass, F., Havard, D., Benford, K., Costescu, A., Sofitiki, A., & Taylor, D. (2013). Metalheads: The influence of personality and individual differences on

- preference for heavy metal. *Psychology of Aesthetics, Creativity, and the Arts*, 7(4), 377-383. <http://dx.doi.org/10.1037/a0034493>
- Tamborini, R. (2011). Moral intuition and media entertainment. *Journal of Media Psychology*, 23, 39-45
- Tamborini, R., Eden, A., Bowman, N. D., Grizzard, M., & Lachlan, K. A. (2012). The influence of morality subcultures on the acceptance and appeal of violence. *Journal of Communication*, 62(1), 136-157.
- Tarakeshwar, N., Swank, A. B., Pargament, K. I., & Mahoney, A. (2001). The sanctification of nature and theological conservatism: A study of opposing religious correlates of environmentalism. *Review of Religious Research*, 387-404.
- Taves, A. (2018). What is Nonreligion? On the virtues of a meaning systems framework for studying nonreligious and religious worldviews in the context of everyday life. *Secularism and Nonreligion*, 7(1).
- Taves, A. (2009). *Religious experience reconsidered: A building-block approach to the study of religion and other special things*. Princeton, New Jersey: Princeton University Press.
- Taves, A., Asprem, E., & Ihm, E. (2018). Psychology, meaning making, and the study of worldviews: Beyond religion and non-religion. *Psychology of Religion and Spirituality*, 10(3), 207-217.
- Tewari, S., Khan, S., Hopkins, N., Srinivasan, N., & Reicher, S. (2012). Participation in mass gatherings can benefit well-being: Longitudinal and control data from a North Indian Hindu pilgrimage event. *Plos ONE*, 7(10), doi:10.1371/journal.pone.0047291

- Thompson, W. F., Geeves, A. M., & Olsen, K. N. (2018). Who enjoys listening to violent music and why. *Psychology of Popular Media Culture*. Advanced online publication. DOI: 10.1037/ppm0000184
- Thorgersen, K., & Wachenfeldt, T. V. (2017). The Becomings of Satanist Musicianship. A study of how black metal musicians describe their learning processes. *Nordic Research in Music Education, 18*, 179–198.
- Thurfjell, D., Rubow, C., Rimmel, A., & Ohlsson, H. (2019). The relocation of transcendence: Using Schutz to conceptualize the nature experiences of secular people. *Nature and Culture, 14*(2), 190-214.
- Todd, N. R., Houston, J. D., & Odahl-Ruan, C. A. (2014). Preliminary validation of the Sanctification of Social Justice Scale. *Psychology of Religion and Spirituality, 6*(3), 245–256. <https://doi.org/10.1037/a0036348>
- Thompson, W. F., Geeves, A. M., & Olsen, K. N. (2018). Who enjoys listening to violent music and why?. *Psychology of Popular Media Culture*.
- Ury-Petes, J. (2016). The numbers of the beast: surveying Iron Maiden's global tribe. In Andy R. Brown, Karl Spracklen, Keith Kahn- Harris, & Niall Scott (Eds.), *Global metal music and culture: Current directions in metal studies* (pp 145-166). Routledge.
- van der Watt, A. S. J., van de Water, T., Nortje, G., Oladeji, B. D., Seedat, S., & Gureje, O. (2018). The perceived effectiveness of traditional and faith healing in the treatment of mental illness: a systematic review of qualitative studies. *Social Psychiatry and Psychiatric Epidemiology, 53*(6), 555-566.
- van den Tol, A. J., & Edwards, J. (2015). Listening to sad music in adverse situations: How music selection strategies relate to self-regulatory goals, listening effects, and mood enhancement. *Psychology of Music, 43*(4), 473-494.

- van Tongeren, D. R., Pennington, A. R., McIntosh, D. N., Newton, T., Green, J. D., Davis, D. E., & Hook, J. N. (2017). Where, O death, is thy sting? The meaning-providing function of beliefs in literal immortality. *Mental Health, Religion & Culture, 20*(5), 413-427.
- Vasan, S. (2016). Gender and power in the Death Metal scene: A social exchange perspective. In Andy R. Brown, Karl Spracklen, Keith Kahn- Harris, & Niall Scott (Eds.), *Global metal music and culture studies. Current directions in metal studies* (pp 261-276). Routledge.
- Venkatesh, V., Podoshen, J. S., Urbaniak, K., & Wallin, J. J. (2015). Eschewing community: Black metal. *Journal of Community & Applied Social Psychology, 25*(1), 66-81.
- Vilar, M. M., García, L. C., & Soto, C. M. (2019). Systematic review of prosocial behaviour measures. *Revista de Psicología, 37*(1), 349-377.
- Volling, B. L., Mahoney, A., & Rauer, A. J. (2009). Sanctification of parenting, moral socialization, and young children's conscience development. *Psychology of Religion and Spirituality, 1*(1), 53-68. <https://doi.org/10.1037/a0014958>
- Watts, F. (2007) Emotion regulation and religion. In J. J. Gross (ed.), *Handbook of Emotion Regulation* (pp. 504-520). New York: Guilford Press.
- Walker, A. G., Jones, M. N., Wuensch, K. L., Aziz, S., & Cope, J. G. (2008). Sanctifying work: Effects on satisfaction, commitment, and intent to leave. *The International Journal for the Psychology of Religion, 18*(2), 132-145.
- Wallach, J., Berger, H. M., & Greene, P. D. (2011). *Metal rules the globe: Heavy metal music around the world*. Durham, NC: Duke University Press.

- Wallach, J., & Levine, A. (2011). 'I want you to support local metal': A theory of metal scene formation. *Popular Music History*, 6, 116-134.
- Weber, C. R., & Federico, C. M. (2013). Moral foundations and heterogeneity in ideological preferences. *Political Psychology*, 34(1), 107-126.
- Weinstein, D. (2011). The globalization of metal. *Metal rules the globe: Heavy metal music around the world*, 34-59.
- Weinstein, D. (2000). *Heavy metal: The music and its culture*. New York: Da Capo Press.
- Weinstein, D. (1995). Rock music: Secularisation and its cancellation. *International Sociology*, 10(2), 185-195.
- Weinstein, Deena (1991). *Heavy metal: A cultural sociology*. New York: Lexington Books.
- Weisskirch, R. S., & Murphy, L. C. (2004). Friends, porn, and punk: Sensation seeking in personal relationships, internet activities, and music preference among college students. *Adolescence*, 39(154).
- Wen, N. J., Herrmann, P. A., & Legare, C. H. (2016). Ritual increases children's affiliation with in-group members. *Evolution and Human Behaviour*, 37(1), 54-60.
- Weston, D. (2011). Basque Pagan Metal: View to a primordial past. *European Journal of Cultural Studies*, 14(1), 103-122.
- Weyand, C., O'Laughlin, L., & Bennett, P. (2013). Dimensions of religiousness that influence parenting. *Psychology of Religion and Spirituality*, 5(3), 182-191.  
<https://doi.org/10.1037/a0030627>
- Whitehouse, H., Lanman, J. A., Downey, G., Fredman, L. A., Swann Jr, W. B., Lende, D. H., ... & Whitehouse, H. (2014). The ties that bind us: Ritual, fusion, and identification. *Current Anthropology*, 55(6), 674-695.



- Winfield, B. & Davidson, S. (1999). *Bleep! Censoring Rock and Rap Music: Contributions to the Study of Popular Culture*. Westport, CT: Greenwood Press.
- Wu, A., Wang, J. Y., & Jia, C. X. (2015). Religion and completed suicide: a meta-analysis. *PLoS One*, *10*(6), e0131715.
- Yilmaz, O., & Bahçekapili, H. G. (2015). When science replaces religion: Science as a secular authority bolsters moral sensitivity. *PloS One*, *10*(9), e0137499.
- Yossman, K. (2016). Meet the metal fans who risk death for heavy metal, *The Spectator*.  
<https://www.spectator.co.uk/2016/05/meet-the-fans-who-risk-death-for-heavy-metal/>  
accessed March 1<sup>st</sup>, 2019
- Zentner, M., Grandjean, D., & Scherer, K. R. (2008). Emotions evoked by the sound of music: characterization, classification, and measurement. *Emotion*, *8*(4), 494.
- Zhou, K., Tang, H., Sun, Y., Huang, G. H., Rao, L. L., Liang, Z. Y., & Li, S. (2012). Belief in luck or in skill: which locks people into gambling?. *Journal of Gambling Studies*, *28*(3), 379-391.
- Ziolkowski, T. (2007). *Modes of Faith*, Chicago: University of Chicago Press.

## Appendices

### Appendix 1 artefact List

Please check the box next to each metal-related item that you own from the list below.

- a bullet belt
- band shirt or hoodie
- compact disc (CD)
- vinyl album
- metal tapes
- poster / poster flag
- a beanie, ballcap, or other hat with a metal logo on it
- a metal dress
- leggings that are metal-themed
- metal-themed underwear or swimwear
- metal-themed drinking or shot glasses
- a metal-themed mug
- metal-themed toys, action figures, bobbleheads, etc.
- a professional print of a metal album cover/painting
- a bootleg copy of an album, live performance, recording, t-shirt, or other metal memorabilia
- music or memorabilia that has been signed by a metal musician
- a metal-themed scarf, socks, Christmas sweater, or some other article of clothing not traditionally associated with metal
- a metal-themed piece of jewelry, pendant, ring, etc.
- a guitar pick, drum stick, drum cover, or something similar that belonged to a musician that you saw perform
- concert tickets, stubs, or wristbands that you saved after attending a metal concert or festival
- metal-themed beer, hot sauce, or other food/beverage item (even if it is only the empty bottle/can)
- a video game that has a metal soundtrack or metal-themed gameplay
- a photograph of yourself with a metal musician (including digital photographs)
- magazines or books about metal

- movies about metal or that are metal-themed
- DVDs, VHS, or blurays of metal music performances or videos
- Horror movies
- An album that you have more than one copy of, or own the same album in different pressings and/or formats.
- an album that you have never opened
- an album that you have never listened to
- an album that you imported from another country
- a piece of clothing or memorabilia that you imported from another country
- a metal-themed comic
- an item from a musician that performed that you obtained such as a drum stick or a guitar pick

## Appendix 2 metal cultural behaviours

To what extent do you engage in each of these metal-related activities/experiences?

1. Never 2. Rarely 3 Sometimes. 4. Regularly. 5. All the time

### **Personal, Motivational, & Experiential Interactions with Metal (28 items)**

1. I attend metal festivals.
2. I tap along to metal music with my feet or hands.
3. I have metal music/songs stuck in my head.
4. I sing along to lyrics or hum along with instrumental parts of metal music.
5. I play air-guitar or air-drums.
6. I headbang.
7. I talk to others about metal music or activities (either in person or over the internet.)
8. I wear metal shirts or clothing.
9. I listen to metal music during daily activities, such as walking, cooking, showering, exercising, or getting dressed.
10. I listen to metal music while driving or while using public transportation (such as a bus or train).
11. I listen to metal music while at work.
12. I listen to metal music while studying.
13. I listen to metal music during leisure (free) time.
14. When I want to accomplish a goal, I listen to metal music for motivation.
15. I tell other people about bands that they might enjoy that they might not have heard.
16. I talk with other metal fans about metal.
17. I follow bands I enjoy on social media (facebook and/or twitter, etc.).
18. I wear metal clothing in non-metal environments, such as to the grocery store.
19. When I go to a metal concert or event, I feel a sense of unity with everyone there.
20. I take photographs or film video at metal concerts and events.
21. When I go to a metal concert or event, I post about it on social media.
22. I play metal music for motivation when I don't have the energy to do anything.
23. I listen to metal music alone.
24. I feel that metal brings me a sense of community. I'm proud to be a part of metal culture.
25. I feel a personal relationship with metal that helps me navigate through life.
26. Metal helps me deal with the hardships in my life.
27. I feel a sense of pride when I buy a new metal item.
28. I feel a connection when I see someone else wearing a metal shirt.

### **Metal Consumerism & Artefact Acquisition (21 items)**

1. I buy band shirts or other clothing items.
2. I buy metal albums (vinyl, CDs, tapes, etc.).
3. I keep my concert tickets, ticket stubs, and/or entry wristbands as a memento.
4. I keep my metal collection/merchandise tidy and organized.
5. I support the bands I enjoy through the purchase of music, clothing merchandise, and/or through buying tickets to see them perform.
6. I know when my favorite bands are touring or releasing new music.

7. I buy metal music or merchandise from a distributor outside of my country (the items had to be imported).
8. I spend money on metal merchandise, music, or memorabilia.
9. I buy music DVDs, bluray, etc.
10. If there is a special edition of a vinyl (e.g., special color) or a CD (box set, bonus tracks, etc.) or tape, I will buy the special edition instead of the regular edition, or I will buy both.
11. I buy multiple versions/pressings/formats of the same album.
12. I have bought or traded for an album that was hard to obtain through ebay, discogs, or through some other source.
13. I collect albums (vinyl, CDs, tapes, etc.).
14. I save money to buy concert tickets.
15. I save money to buy more metal music or clothing.
16. I go into debt after spending too much on metal related items and concerts.
17. I spend more money than I should on metal related items and concerts.
18. I sacrifice things that are less important to me so that I can buy more music and/or concert tickets.
19. I read literature (magazines, books, blogs, etc.) about metal music and/or culture.
20. I buy literature (magazines/books/etc.) about metal music and culture.
21. I sacrifice things other people consider more important so that I can buy concert tickets or metal memorabilia.

#### **Metal Aesthetic Behaviours (25 items)**

1. I buy patches.
2. I buy patches with the intention of sewing them on a jacket, vest, or other clothing article.
3. I buy jewelry with symbols that can be associated with metal music (e.g., band logos, Sigil of Baphomet, pentagram, Ankh, Satanic Cross, inverted cross, etc.).
4. I put on makeup in a style that matches the metal aesthetic.
5. I modify my clothes (make non-metal clothes more metal, or change a metal clothing item into something else, like a shirt into a dress).
6. I get a new tattoo.
7. I get a new piercing.
8. I wear corpsepaint.
9. When I am engaging in sexual activity, I listen to metal music.
10. I choose to wear metal clothing that I know could bother or offend some people.
11. I feel the most comfortable when I'm wearing metal clothes.
12. When I date someone, they have the same musical taste as me.
13. I buy band posters and/or poster flags.
14. I decorate my home to look more metal (CD collection, posters, figurines, etc.).
15. I sew metal patches on to clothing (jackets, vests, pants, etc.).
16. Metal has an influence on who I associate with.
17. I feel uncomfortable when I'm not wearing a band shirt or anything metal.
18. I seek out musicians to meet them and/or to take photos with them.
19. Metal music and/or culture influences what social activities I participate in.
20. I feel envious or jealous when someone has a shirt, album, signature, or attends a concert that I don't.
21. I look down on other metal fans that enjoy bands that I don't like.

22. I make fun of metal fans that enjoy crappy metal bands.
23. I make memes about metal music and culture.
24. I am very critical of new metal music.
25. I feel that old metal music is better than new metal music.

**Communal Support (20 items)**

1. I attend metal festival(s).
2. I attend metal concert(s).
3. When I am at a metal concert or festival, I mosh.
4. When I am at a metal concert or festival, I crowd surf.
5. When I am at a metal concert or festival, I stage dive.
6. I support my local music scene.
7. I feel that more people should support their local music scene.
8. I tell my friends about upcoming concerts (either in person, or through sharing/tagging on social media).
9. I meet new friends through metal.
10. I speak to metal musicians (in person or over social media).
11. I am willing to let metal bands/musicians sleep or practice at my house/apartment.
12. I book, or have helped book, bands for a concert or festival performance.
13. I save money to buy concert tickets.
14. I travel outside of my country for a metal concert or event.
15. I travel outside of my state for a metal concert or event.
16. I travel outside of my city for a metal concert or event.
17. I attend local metal concerts / shows.
18. I attend DIY/basement metal shows and/or parties.
19. I listen to metal music with other people.
20. I choose to visit a bar or restaurant that is metal-themed instead of a non-metal establishment.

### Appendix 3 metal identity scale

#### **Metal identity scale adopted from Geek Identity Scale (GIS; McCain, Gentile, & Campbell, 2015).**

McCain, J., Gentile, B., & Campbell, W. K. (2015). A psychological exploration of engagement in geek culture. *PloS one*, 10(11), e0142200.

On a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), please indicate your agreement to the following statements:

- I consider myself to be a "metal fan."
- Being a metal fan is central to my identity.
- Being a metal fan is important to me in my life.
- Being a metal fan is a major part of who I am.
- I would describe myself to others as being a metal fan, or some similar term.
- I am proud of being a metal fan.
- If I stopped participating in metal-related activities, I just wouldn't be the same person.
- I can't imagine life without my metal interests and activities.
- I consider myself to be part of metal culture.
- I value being metal.

## Appendix 4 metal commitment & salience in metal commitment scales

Adapted from Pfeifer & Waelty, 1995

Please answer the following questions with yes or no as they apply to you.

### **Metal Commitment Scale**

#### **Positive Commitment (14 items)**

1. Metal helps me not to despair in difficult circumstances.
2. Metal music brings me a sense of security when I'm dealing with hardship.
3. Metal is especially important to me because it helps me deal with many of life's unanswered questions.
4. Without metal and metal friends my life would be less meaningful to me.
5. What metal offers me most is comfort when sorrows and misfortune strike.
6. My love for metal lies behind my whole approach to life.
7. One reason that I'm a metal fan is that it provides me with a social group that I relate to.
8. To live a metal life means, in my opinion, to defend this musical lifestyle and to find community with other metal fans.
9. Would you be as happy without metal? (reverse coded)
10. Quite often when I'm in the presence of live metal music, I experience the presence of something divine.
11. Do you think that you are living a meaningful life with the help of metal music and/or culture?
12. Metal carries over into other aspects of my life.
13. One of the reasons I listen to metal music is that it gives me a sense of relief.
14. Does metal make you feel more confident sexually?

#### **Anti-metal commitment / Metal as corruptive (6 items)**

1. Do you think that metal can cause sexual crimes?
2. Do you think that the violent themes in metal music can make a person sick?
3. Has metal ever caused you to have dark thoughts that you later felt guilty about?
4. Do you think that metal music can cause people to do bad things?
5. In coping with my difficulties, metal is more of a burden than a support.
6. Do you listen to metal often? (reverse coded)

#### **Familial Commitment (3 items)**

1. Do you think that your parents have passed metal down to you?
2. Were your parents into metal?
3. I listen to metal because my parents taught me to listen to metal.

#### **Salience in Commitment to Metal (1 item)**

Adapted from Roof & Perkins, 1975

Which is the most accurate statement for you:

- Metal is only of minor importance for my life, compared to certain other aspects of my life.
- Metal is important for my life, but no more important than certain other aspects of my life.
- Metal is of central importance for my life, and would, if necessary, come before all other aspects of my life.



### Appendix 6 emotions from music

**Factors: Wonder, Transcendence, Tenderness, Nostalgia, Peacefulness, Power, Joyful Activation, Tension, Sadness**

Zentner, M., Grandjean, D., & Scherer, K. R. (2008). Emotions evoked by the sound of music: characterization, classification, and measurement. *Emotion*, 8(4), 494.

How often do you experience each of the following emotions/feelings while listening to DEATH METAL?

Never, occasionally, fairly often, frequently

Relaxed

Happy

Joyful

Dreamy

Stimulated

Dancing (bouncy)

Enchanted

Nostalgic

Allured

Touched

Free

Calm

Sentimental

Energetic

Filled with wonder

Amused

Passionate

Animated

Melancholic

Light

Moved

Inspired

Dazzled

Serene

Tender

Euphoric

Meditative

Floating

Sweet

Soothed

In love

Sensual

Strong

Spiritual feeling

Affectionate

Exciting

Feeling of transcendence  
Mellowed  
Disinhibited  
Caressing  
Shivers (thrills)  
Electrified  
Agitated  
Fiery  
Sad  
Triumphant  
Voluptuous  
Goose bumps  
Solemn  
Languorous  
Heroic  
Impatient  
Serious  
Irritated  
Proud  
Revolted  
Annoyed  
Nervous  
Tense  
Bittersweet  
Indifferent  
Aggressive  
Anxious  
Sorrowful  
Depressed  
Angry

**Larger Factors:**

Sublimity (wonder, transcendence, tenderness, nostalgia)

Vitality (power, joyful activation)

Unease (tension, sadness)

## Appendix 7 religious language to describe musicians

14 items

Think of some of your favorite musicians. To what extent do you agree with each of the following statements?

1 = Strongly disagree, 5 = strongly agree

### **Connection to a musician (person as sacred-like)**

1. This person is a legend.
2. This person is a god.
3. I worship this person.
4. I hope to be like this person someday.
5. This person is immortal because their music will never die.
6. I think of this person as more than a musician.
7. The music of this person will last forever.

### **Connection to a musician's music (person's music as sacred-like)**

1. This person's music is a source of inspiration for me.
2. This person's music brings me a sense of peace.
3. This person's music brings me hope and optimism about my own life.
4. I have found something deeper than music in this person's compositions and performance.
5. This person's music got me through some hard times in my life.
6. I think this person's music has had an impact on the world.

## Appendix 8 sacred to the self and sacred to the death metal community

1 = not at all, 5 = a great deal / very much

### **Sacred to the self (4 items)**

1. How much of an impact does this song have on you? (How much does it move or affect you?)
2. To what extent do you feel that this song is important to you?
3. In Decibel magazine's Napalm Death special issue, Matt Harvey (Exhumed, Gruesome) said that "Music listeners cherish epiphanies that last a lifetime - moments when a piece of music changes your perspective of what's possible and what you're into." To what extent has this song ever made you feel that way?
4. To what extent was this song important for you when you were getting into death metal?

### **Sacred to the community (4 items)**

1. To what extent do you think that this is an important song to the history of death metal?
2. To what extent would you expect other fans of death metal to greatly enjoy or appreciate this song?
3. To what extent would you expect other death metal fans to find this song to be very special?
4. To what extent would you expect other death metal fans to rate this song as important for getting into death metal?

### Appendix 9 positive & negative affect schedule

Ebesutani, C., Regan, J., Smith, A., Reise, S., Higa-McMillan, C., & Chorpita, B. F. (2012). The 10-item positive and negative affect schedule for children, child and parent shortened versions: application of item response theory for more efficient assessment. *Journal of Psychopathology and behavioural Assessment*, 34(2), 191-203.

When you hear this song, to what extent does it make you feel the following emotions?

1 = not at all    5 = extremely

joyful

cheerful

happy

lively

proud

miserable

mad

afraid

scared

## Appendix 10 prosocial behaviour intentions scale

Baumsteiger, R., & Siegel, J. T. (2018). Measuring prosociality: The development of a Prosocial Behavioural Intentions Scale. *Journal of personality assessment*, 1-10.

Instructions: Imagine that you encounter the following opportunities to help others. Please indicate how willing you would be to perform each behaviour from 1 (Definitely would not do this) to 7 (Definitely would do this).

1. Comfort someone I know after they experience a hardship  
1 (Definitely would not do this) to 7 (Definitely would do this)
2. Help a stranger find something they lost, like their key or a pet  
1 (Definitely would not do this) to 7 (Definitely would do this)
3. Help care for a sick friend or relative  
1 (Definitely would not do this) to 7 (Definitely would do this)
4. Assist a stranger with a small task (e.g., help carry groceries, watch their things while they use the restroom)  
1 (Definitely would not do this) to 7 (Definitely would do this)

### Appendix 11 social generativity scale

Morselli, D., & Passini, S. (2015) Measuring prosocial attitudes for future generations: The SocialGenerativity Scale. *Journal of Adult Development* 22(3), 173-182.

Please indicate the degree in which the following statements apply to you  
0 = Not at all, 6 = completely

I feel that I ought to carry out activities in order to ensure a better world for future generations.

I feel that it is important for me to have a personal responsibility to improve the area in which I live.

I would willingly give up part of my daily comforts to foster the development of succeeding generations.

I think that I am personally responsible for ensuring a state of well-being for future generations.

I commit myself to do things that will survive even after I die.

### Appendix 12 empathy quotient

To what extent are the following statements true for you?

Loewen, P. J., Lyle, G., & Nachshen, J. S. (2009). An eight-item form of the Empathy Quotient (EQ) and an application to charitable giving. Retrieved from crcee.umontreal.ca/pdf/Eight%20Question%20ES\_final.pdf.

1. I find it easy to put myself in somebody else's shoes.  
1 (strongly disagree) to 5 (strongly agree)
  
2. I am good at predicting how someone will feel.  
1 (strongly disagree) to 5 (strongly agree)
  
3. I am quick to spot when someone in a group is feeling awkward or uncomfortable.  
1 (strongly disagree) to 5 (strongly agree)
  
4. Other people tell me I am good at understanding how they are feeling and what they are thinking.  
1 (strongly disagree) to 5 (strongly agree)
  
5. I find it hard to know what to do in a social situation.  
1 (strongly disagree) to 5 (strongly agree)
  
6. I often find it hard to judge if something is rude or polite.  
1 (strongly disagree) to 5 (strongly agree)
  
7. It is hard for me to see why some things upset people so much.  
1 (strongly disagree) to 5 (strongly agree)
  
8. Other people often say that I am insensitive, though I don't always see why.  
1 (strongly disagree) to 5 (strongly agree)



### Appendix 13 psychological functions fulfilled by music

You've now listened to four clips of songs from the same or a similar style of music. To what extent do these songs, and ones like them, help you...

1 never, 2 rarely, 3 sometimes, 4 regularly, 5 all the time

#### **Factor: To regulate arousal and mood**

1. Take your mind off things.
2. Avoid boredom.
3. Enhance your mood.
4. Help you relax.
5. Make things (chores, work, etc.) seem effortless.
6. Help calm you down when angry.

#### **Factor: To achieve self-awareness**

1. Think about yourself.
2. Helps you think about your thoughts and emotions.
3. Think about your identity.
4. Find your own way, your own path in life.
5. Learn about yourself.
6. Be more contemplative.

#### **Factor: As an expression of social relatedness**

1. Feel like you belong to a given social group.
2. Feel connected to all people who like the same kind of music.
3. Feel connected to your friends.
4. Feel connected to others.
5. Feel like you belong.
6. Have something to talk about with your friends.

### Appendix 14 most sacred metal cultural artefact

Think of the most important item in your metal collection, wardrobe, or the most important item you associate with metal culture or your metal identity. If you have multiple, then just choose one item that is especially meaningful to you for this set of questions. This can be any piece of memorabilia or a cultural artefact that is sacred to you, such as a battle jacket, a rare or signed album, a photograph, a guitar pick, etc. Which of these best describes the item that you're thinking of:

- a rare or original pressing of a CD, vinyl, or cassette
- an item that is signed by a musician
- an item that belonged to a musician performing on stage, such as a guitar pick or drumstick
- a patch
- a battle jacket or vest
- a piece of jewelry or accessory
- a photograph with a musician
- a photograph with your metal friends
- a poster or poster flag
- a metal-related heirloom passed down by a family member
- a metal-related tattoo
- a shirt or hoodie
- an art print
- an album that you performed on
- a letter from a musician
- other (please describe)

## Appendix 15 sacred loss, desecration, & non-sacred loss vignettes

### Sacred loss 1

Roberto was an avid collector of vinyl albums for many years. His favourite album that he owns was a 1988 original pressing that regularly sells online for around a thousand dollars. The album is Roberto's most prized possession, and it is one thing that he proudly shows to any guests that visit his house. Recently, Roberto lost his job, and he is struggling to pay off his ever-increasing debts. He did not have a means of paying his most recent housing bill, which was for a thousand dollars. Roberto was unwilling to become homeless, so he had to find a way to pay off the payment in time. Although Roberto loves his 1988 first press album more than anything else he has, it seemed as though the only way to keep his house was to sell his favourite album. Roberto sold his album, knowing that he can never replace it.

### Sacred loss 2

Rebecca had idolized her favourite guitarist ever since she was a child, when her father first introduced her to metal music. When she turned 8 years old, her father took her to see her favourite band. At the concert, Rebecca and her father were towards the front of the stage, right in front of the band. Rebecca's father let her sit on his shoulders throughout the concert so that she could see over all of the other people in attendance. At the end of the show, Rebecca's favourite guitarist handed Rebecca a signed guitar pick that he had been using to play that night. Rebecca is 18 now, and that guitar pick is still a very special object for her, both for being something that connects her to metal, and for being something that connects her to her father. Recently, Rebecca moved to a new home, and her guitar pick was lost somewhere in the move. She would never see it again.

### Non-sacred loss 1

Chelsea is an avid reader. She looks forward to every summer, because she likes to read through as many books as she can. This is a tradition that Chelsea had been continuing for 15 years, starting with when she was in high school. This summer, she had a stack of eight books ready, which she had sitting next to the couch at home. The books were carefully chosen from top selling lists of books about drama. Some of the books were recommended through a website that Chelsea regularly purchased books from. Chelsea's dog is usually well behaved, but the dog was especially rambunctious one day while Chelsea was at work, and she chewed up all of Chelsea's new stack of books. When Chelsea returned home from work, she was upset that her dog had chewed up this summer's reading list. The books were ruined.

### Non-sacred loss 2

Every year, Sam would receive a gift card for his favorite clothing store for his birthday. This year, he was eager to buy himself some new jeans. He took his time at the clothing store, trying on a dozen pairs of jeans before deciding on a pair that he really liked. They fit him well, were stylish, and were within the budget of his gift card. He was looking forward to wearing them the next time he would hang out with his friends. Sam excitedly purchased his new pants, and went home to wash them. As Sam sorted his laundry, he was unaware that the cap on a nearby bottle of bleach was loose. Sam tripped on her laundry basket, but caught himself using the shelf that the bleach was on. This caused a chain reaction, and some of the bleach poured onto Sam's new jeans. It wasn't a lot of bleach, but it was enough to ruin his new jeans. Discouraged and upset, he threw his new jeans in the trash.

### Desecration 1

A few years ago, Tobias came across his favourite band as they were exiting their tour bus, prior to performing at a concert. He excitedly approached the band and told them how much their music had meant to him. They enthusiastically invited him onto their tour bus, and humoured Tobias' request to take a photo with him. That night was very special to Tobias, because it confirmed for him that not only did his favourite band make music that touched him on a personal level, but also, that they were genuinely decent human beings. Tobias proudly kept the photo of him and the band framed in the centre of his living room. The picture was regularly a source of conversation between him and his friends. Tobias saw on the news that a female fan of the band had been raped by the band on their tour bus. The band was found guilty of the charges. Tobias was outraged that his idols could act in such a way, and so Tobias destroyed the photo and everything he owned by the band. He could no longer listen to them after what they had done.

### Desecration 2

Alexandra's favourite band had helped her get through many hard times in her life. She related to the lyrics, and the intensity of the music helped Alexandra get motivated to tackle life's obstacles. The second time that Alexandra saw the band live, she was able to meet the members after the show. The guitarist of the band signed her favourite album. After that day, the signed album was always the centrepiece of Alexandra's record collection. The signed album meant a lot to her. Recently, metal news tabloids had begun reporting on the arrest of Alexandra's favourite guitarist. It was clear that the guitarist was a paedophile, and the content that was described by authorities on the guitarist's computer made Alexandra sick to her stomach. Alexandra could no longer bear to look at the signed album that was so important to her. Alexandra destroyed the album.

## Appendix 16 nontheistic sacred loss & nontheistic desecration scales

Secular sacred loss items adapted from Pargament, Yagyar, Benore, & Mahoney (2005)

### **Nontheistic Loss**

1. Something that gave sacred meaning to my life is now missing.
2. Something of sacred importance in my life disappeared when this event took place.
3. I suffered a loss of something that was an important gift in my life's journey
4. Something I held sacred is no longer present in my life.
5. A source of spirituality became absent in my life.
6. In this event, something central to my spirituality was lost.
7. Part of the pain of this event involved the loss of a blessing.

### **Nontheistic Desecration**

1. A violation of something spiritual to me occurred.
2. This event was an immoral act against something that I value.
3. The event was a disgraceful act involving something meaningful in my life.
4. Something evil ruined a blessing in my life.
5. A sacred part of my life was violated.
6. This event was a transgression of something sacred.
7. Something that was sacred to me was destroyed.

## Appendix 17 shortened CES-D depressive symptomatology

### Shortened CES-D Depressive Symptomatology

#### **An 8-item version is used in place of the 20 item version in Pargament's study:**

Karim, J., Weisz, R., Bibi, Z., & ur Rehman, S. (2015). Validation of the eight-item center for epidemiologic studies depression scale (CES-D) among older adults. *Current Psychology*, 34(4), 681-692.

Below is a list of the ways that the person in the story might have felt or behaved. Imagining you were the person in the story, how often would you have felt this way during the week following the loss?

1 = rarely or none of the time, 2 = some or a little of the time, 3 = occasionally or a moderate amount of time, 4 = most or all of the time

1. I felt depressed.
2. I felt everything I did was an effort.
3. My sleep was restless.
4. I was happy. (reverse)
5. I felt lonely.
6. I enjoyed life. (reverse)
7. I felt sad.
8. I could not "get going."

### Appendix 18 anger and anxiety from state-trait anger expression inventory

The Five Anger Items and five Anxiety items from the State-Trait Anger Expression Inventory (Spielberger, 1991) that were used in the Pargament, Magyar, Benore, & Mahoney (2005) study.

Spielberger, 1991. State-trait anger expression inventory, revised research edition, professional manual. Odessa, FL: Psychological Assessment Resources.

If you were the person in the story, how well would the following items describe the feelings that you would associate with the loss of the item:

1 = not at all to 5 = very much.

1. angry
2. furious
3. annoyed
4. mad
5. irritated
1. nervous
2. tense
3. worried
4. upset

### Appendix 19 magical essence scale

Think about the item you've mentioned above and how it relates to the musical artist that it is associated with. Answer each of the following questions as they best apply to you. If your item is not related to a band or artist, select "not applicable".

To what extent do you feel that:

0 = not applicable 1 = not at all, 2 = a little, 3 = a moderate amount, 4 = very much

1. Part of the musician is still present in the item
2. Something has been transferred from the musician into the item that is difficult to describe
3. I feel a strong connection between myself and the band/musician through this item
4. This item is a sacred item to me that I would never sell.
5. This item has a power that is difficult to describe or explain.