

Evaluating the Potential for Psychedelics to Alleviate Terror Management-Related Aggression
Towards Outgroup Members
Mark A. Hardy

ABSTRACT

This thesis is an empirical review that attempts to outline a logical pathway for the use of psychedelic compounds in clinical studies as a means of reducing terror management-related aggression towards outgroup members. How individuals align with certain groups is determined by their endorsement of the various moral foundations, and is done in order to quell the terror they feel as a result of mortality salience. Depending on whether individuals identify more with the individualizing moral foundations or the binding moral foundations, individuals' attitudes towards outgroup members can be drastically impacted. Through the use of white nationalist and right-wing authoritarian groups as examples, the downfalls of strong attachment to the binding moral foundations are revealed. Experiences with psychedelic compounds in controlled clinical settings have shown to increase individuals' openness to experience personality trait, which in turn moderates the relationship between right-wing authoritarianism and aggressive behaviors towards outgroup members who challenge the individuals' deeply held worldviews and beliefs. Findings implicating the potential for psychedelic compounds to alleviate terror management-related aggression towards outgroup members as a result of mortality salience are discussed below, as well as reasons why further study in these areas should be encouraged.

INTRODUCTION

The aim of this thesis is to evaluate the potential of psychedelic compounds used in controlled, clinical settings to moderate the feelings of aggression and anxiety individuals feel towards outgroup members as a result of terror management. Terror management theory, mortality salience, moral foundations theory, the rise of white nationalism and right-wing authoritarianism, and the re-emergence of rigorously controlled clinical studies of psychedelic compounds, are the topics of interest. These topics have all been evaluated through in-depth research that is reviewed in the following pages, and connected in ways that may not seem apparent at first to the reader. I strive to logically review and relate the topics mentioned above into a cohesive narrative, with the intended purpose of promoting future research in these areas which could uncover potentially significant findings with a wide variety of applications.

Terror management theory is an idea that has shown up in several of my classes at Notre Dame. In particular, during a psychology of religion class one fall, was when I became intrigued with the theory. After reading Jesse Bering's (2006) work on the folk psychology of souls, my classmates and I discussed the various critical responses to Bering's research that were included as part of the paper. In particular, one critique stood out, as it pointed out that Bering's work did not acknowledge the role that terror management theory plays in humans' belief in souls or the continuity of some part of the human being after death. Generally, terror management theory states that while humans have an innate self-preservation instinct, they are the only animals uniquely aware of the inevitability of their deaths. This conflict between self-preservation and mortality salience brings about terror in human beings, and leads them to embrace cultural worldviews, ideologies, and religions that can serve as psychological buffers to that conflictual

terror and death anxiety (Greenberg & Kosloff, 2008). Tying this theory together with Bering's (2006) work, the idea that the development of a soul concept could be related to people managing the terror of knowing they will eventually die is a fascinating approach. Human beings understand that their physical bodies will not live on past death, and are terrified by that fact. To mitigate this death anxiety, human beings form certain terror-managing beliefs, such as the soul, which represents a spiritual or metaphysical part of the human being that allows for psychological immortality.

Furthermore, research has shown that when people are reminded of their mortality, they tend to hold tightly to those beliefs, ideologies, religions, and other worldviews that can serve as defense mechanisms to their death anxiety. Without these psychological buffers, any thoughts of inevitable death can drastically reduce well-being (Arrowood et al., 2018). This finding helps to explain why people often lash out in anger and aggression towards outgroup members, or more simply people in groups other than their own. When people are reminded of their mortality, they tend to perceive outgroup members with different beliefs, ideologies, or religions as threats to them, their way of life, and their carefully managed terror. Those perceived threats can lead to anger, violence, and exclusionist attitudes towards outgroup members (Canetti-Nisim, Ariely, & Halperin, 2008). This research made me interested in finding ways to potentially mitigate or alleviate the aggression that comes as a consequence of terror management, and one of the first ideas I came across that tied into the research on terror management was moral foundations theory.

In moral foundations theory, Jesse Graham and Jonathan Haidt (2007) outline five groups of morals including care, justice, ingroup loyalty, obedience to authority, and lastly, enforcement

of purity standards. These five groups of morals can then be split into two subgroups, individualizing moral foundations and binding moral foundations. The individualizing moral foundations are considered to be care and justice, while the binding moral foundations are considered to be ingroup loyalty, obedience to authority, and also enforcement of purity standards. Plenty of research has been done on the differences between the individualizing moral foundations and the binding moral foundations, as well as on how attitudes between groups can be partially recognized by their alignment with the various moral foundations. The effect that drew me to this research is characterized by the findings in Hadarics' and Kende's (2018) work. Their research found that identifying with individualizing moral foundations universally reduced prejudices towards outgroup members. Conversely, identifying with the more selective binding moral foundations increased prejudice and anger towards outgroup members that were perceived to be threats to the individual's need for security (Hadarics & Kende, 2018). While moral foundations theory itself may not reduce the aggression towards outgroup members that arises out of terror management, an important distinction can be made between moral foundations that increase the prejudices and moral foundations that decrease the prejudices people feel towards outgroups and outgroup members.

The next logical topics to explore were ways in which individualizing moral foundations could be bolstered to decrease the amount of prejudice a person feels towards outgroups when they perceive outgroup members as threats. Before doing so, finding a relevant, well-known ideology or belief system was essential in order to use it as an example of what can happen when terror management goes to the extreme, and to show how certain ideologies and belief systems align with different moral foundations which can lead to a variety of social, religious, and

political consequences. After reading through research on the major belief systems as well as social and political ideologies, the ideology that stuck out the most in the literature was the rise of white nationalism and right-wing authoritarianism.

Right-wing authoritarianism is a psychological buffer to death anxiety in the same way as any other religious or ideological belief. Research on right-wing authoritarianism reveals that individuals who identify more closely with this ideology display increased levels of prejudice and higher correlations with religious fundamentalism (Altemeyer & Hunsberger, 1992). This research on right-wing authoritarianism and prejudice connects directly with that of moral foundations theory, and examines an ideology that correlates highly with the binding moral foundations. This connection is exemplified by the work of Hotchin and West (2018), who found that scales of right-wing authoritarianism fully mediated relationships between personality and outgroup prejudice. The more an individual's personality traits aligned with ideas of right-wing authoritarianism, the stronger feelings of prejudice the individual felt towards outgroup members whom they perceived as threats (Hotchin & West, 2018). Furthermore, studies of right-wing authoritarianism relate strongly with studies of whiteness and increases in white nationalism. Gallagher and Twine (2017) describe that whiteness has become a distinct socio-political category with ties to power, supremacy, hegemony, and increased privilege in communities around the world. When that power, supremacy, and privilege is seemingly infringed upon, white individuals who score highly on measures of right-wing authoritarianism, and therefore correlate more positively with the binding moral foundations, tend to support intergroup hostility and discrimination against outgroup members (Kugler, Jost, & Noorbaloochi, 2014). This research helps tie the examples of white nationalism and right-wing authoritarianism back to both moral

foundations theory and terror management theory, but what I needed to find was an effective way to reduce feelings of outgroup aggression commonly felt by those scoring highly on white nationalist and right-wing authoritarianism scales. Sibley and Duckitt (2010) studied the relationships between Big 5 personality traits and right-wing authoritarianism, and found that high levels of openness to experience significantly moderated and reduced feelings of aggression towards outgroup members. In other words, the more open to experience an individual was, the less aggressively they felt towards outgroup members whom they mistakenly perceived as threats. Following along with this critical finding, my next task was to discover research that revealed marked increases in openness to experience in order to mitigate those feelings of aggression towards outgroups members. This search led me back to a topic that I had been fascinated by for years: psychedelic compounds.

During a summer study abroad trip to South Africa, I became exposed to the writings of Aldous Huxley. While the ideas in his writings were intriguing, an element of his personal life stood out, which was his fascination with psychedelic compounds, specifically the naturally occurring substance psilocybin, and its synthetic counterpart lysergic acid diethylamide, more commonly known as LSD. Huxley regularly partook in these mind-altering experiences and believed in the ability of these psychoactive compounds to help individuals achieve higher forms of consciousness. Although the potential higher consciousness-inducing psychedelic compounds remained an exciting idea, it was not until a year and a half later, when I sat in a different class that was coincidentally taught by the same professor from the South Africa class, that I became re-invigorated by the idea of psychedelics. We were shown an interview by Stephen Colbert of the experiential, investigative author, Michael Pollan. Pollan had just finished writing a book

about psychedelics, and they discussed his interactions with a variety of psychoactive compounds and what he learned from those experiences. Upon hearing what Pollan had to say about the dissolution of the ego and the healing benefits of his experiences, I knew I needed to learn more about these curious compounds. After reading Pollan's bestselling novel *How to Change your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*, I learned about the history of clinical psychedelic studies, the reasons for the ban of psychedelics in the late-1960s and early-1970s, as well as the incredible work of current researchers such as Roland Griffiths, Bob Jesse, Paul Stamets and others, that has occurred since the re-emergence of government-funded clinical studies in the early-2000s (Pollan, 2018). This book introduced different theories about the history of psilocybin and other psychedelics as central tenets to many natural and native religions dating back thousands of years. The book also related personal stories of how the psychedelic compounds impacted many individual's lives in positive ways and led people on countless meaningfully mystical and spiritual journeys. This reignited passion into the science of psychedelic compounds, and the healing powers they possess, led me to discover a creative and relevant pathway to incorporate psychedelics into this thesis.

As mentioned above, the task was to find research which implicated increases in the openness to experience measure of personality. In studies done on individuals suffering from treatment-resistant depression, scores of openness to experience increased significantly following a controlled psilocybin session and remained at significantly increased levels at 3-month and 6-month follow-ups (Erritzoe et al., 2018). The results of this study reveal a potential for psilocybin and other psychedelics, when used in controlled clinical settings, to meaningfully

increase openness to experience in individuals. This finding ties back to previous research cited in this thesis, including: how increased openness to experience moderates the relationship between right-wing authoritarianism and aggression towards outgroup members, how people who identify with right-wing authoritarianism tend to relate more with binding moral foundations, and lastly, how those who identify highly with binding moral foundations are more inclined to act aggressively towards outgroup members in response to terror management-related anxiety (Sibley & Duckitt, 2010; Kugler, Jost, & Noorbaloochi, 2014; Hadarics & Kende, 2018).

There are many reasons to pursue research into clinical applications of psychedelic compounds further. The world today is fraught with news stories about violence and hatred between groups, as well as conflicts and wars between nations and states with differing political, religious, or ideological views. All an individual has to do is look at the current US-Mexico border crisis, the many white nationalist hate crimes in the United States over the last decade, or the white nationalist hate crimes abroad like the tragic recent example of the New Zealand mosque shootings in March of 2019, to see the intergroup conflicts that afflict communities across the world as a result of group-based terror management. While no data was collected specifically for this thesis, a meta-analysis of much of the relevant literature is presented to inspire more research in these critical areas.

Another reason to pursue psychedelic research is the implication the work has for the millions of individuals who suffer from a variety of mental health conditions. Countless individuals take antidepressant or anxiolytic medications each day, and refill prescriptions each month, in order to address whatever psychological issues they face. Psychedelics have shown marked improvements in mental well-being after only a single use, and this finding has the

potential to disrupt the field of mental health and therapy, as well as the potential to break the current pharmaceutical mental health prescription model. While this idea is quite groundbreaking, it will not be examined as much in the body of this thesis, but rather in the discussion when focusing on future applications of this research, and the increase in well-being it could potentially provide to millions of people. Research into the healing compounds of psychedelics will certainly not save the world from all hurt and hate, but through rigorous study and examination, can potentially alleviate the anxieties, fears, traumas, addictions, and depressive states that affect far too many people, and bring more positivity, hope, love, oneness, and beauty into people's lives.

The rest of this thesis is laid out directly in line with how the topics were presented above. The following literature review will dig deeper into the research in each of these areas, in order to illuminate the knowledge gaps and reveal clear lines of research that can be pursued in the future. It is vital that controlled clinical studies of psychedelics continue to increase in size, and receive more grant funding in order to fill these knowledge gaps. Further research will be relevant to psychologists, psychiatrists, sociologists, psychopharmacologists, and many other mental health professionals and medical doctors, who seek to provide their struggling patients with alternative treatments and therapies to the psychological problems they face. The aim of this thesis is to provide corroboration for pursuing more studies to help address a wide range of mental health issues and psychological abnormalities, as well as to find ways to reduce the feelings of hate and aggression that many people feel towards outgroup members. I have introduced each topic and outlined them in a way that presents a cohesive, logical process that combines elements of terror management, moral foundations, white nationalism and right-wing

authoritarianism, and controlled clinical studies of psychedelic compounds, into a significant review that deems further investigation and potential clinical study. The critical question that will be reviewed in the following pages is that of the potential for psychedelic compounds to alleviate terror management-related aggression towards outgroup members. White nationalism and right-wing authoritarianism will be employed as the primary example through which the ideas of terror management and moral foundations have manifested themselves, while psychedelic compounds used in rigorously controlled clinical studies will be identified as a possible means of reducing the adverse outcomes that result from terror management in this example group.

LITERATURE REVIEW

The goal of this literature review is to analyze in-depth the research being done in the areas of terror management theory, moral foundations theory, white nationalism and right-wing authoritarianism, and clinical studies of the effects of psychedelic compounds on a variety of mental health issues and personality traits. While no data was collected specifically for this thesis, a meta-analysis of these areas of research has been conducted. Following a review of the literature on each topic, the findings from each area of research are combined logically, and merit further study to help fill in the gaps in the research.

Terror Management Theory

Terror management theory originated from a 1973 book by Ernest Becker called *The Denial of Death*, in which he argued that much of what human beings do in their lives is done in order to distract themselves from the inevitability of their own deaths. Since the late-1970s, much research has been done in the area of terror management, specifically involving experiments of mortality salience. Mortality salience means reminding people of their inevitable

deaths, which can cause adverse reactions towards outgroup members in certain circumstances. In a study done by Greenberg et al. (1990), the researchers found that mortality salience in subjects related to highly positive opinions of ingroup members as opposed to much more negative opinions of outgroup members. When a confederate in the study indicated agreement with the subject's beliefs and ideologies, the subject thought very highly of the confederate, whereas when the confederate disagreed with and denounced the subject's beliefs and ideologies, the subject felt more negative emotions towards the confederate (Greenberg et al., 1990). These findings reveal that when someone else agrees with an individual about their beliefs, the individual is more likely to think favorably about that individual than if the other person did not agree with the individual's beliefs. In a separate study done by Schindler, Reinhard, and Stahlberg (2013), the researchers found that after individuals pondered their own mortality, they were more likely to give money to people who supported them in the past, and less money to individuals who had denied helping them earlier in the study. This "tit for tat" ideology fits in with the idea that individuals feel positively towards those who support them and hold membership in their same groups, while feeling more negatively towards those who deny them help and are members of other outgroups.

Per these research findings, when subjects were asked to propose a significant policy change that would potentially affect the lives of many people, they were then tasked with contemplating their mortality. After doing so, subjects were presented with literature that either backed their decision or went against the decision they made, and subjects had a much higher preference for information that backed up their original decision than information that did not (Jonas, Greenberg, & Frey, 2003). This finding seems to make common sense. Whenever people

make a big decision in their lives, they prefer to see evidence that their decision was the correct one as opposed to evidence that they may have made the wrong decision. When individuals are forced to consider their mortality, they desire corroboration from ingroup members and denounce challenges from outgroup members.

The role that fear of death plays in an individual's daily life and their social routines cannot be overstated. When individuals are reminded of their mortality, they identify themselves more closely with those who uphold their same cultural values and denounce those whom they perceive to be violating the individual's cultural values (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). While these lab studies may not seem to be of much importance at first glance, the adverse effects that can arise as a result of terror management are evident. Niesta, Fritsche, and Jonas (2008) found that individuals undergoing mortality salience reveal highly adverse outcomes including aggressive thoughts and prejudice towards outgroup members, as well as increased stereotyping and racism. This finding displays that terror management theory does not merely account for individuals thinking more highly of those who agree with them and thinking less of those who do not. Terror management theory accounts for when individuals take it a step further because when other people from a different group do not agree with someone, that individual tends to quickly jump to more aggressive, derogatory, and racist thoughts towards those outgroup members who disagree with them. This statement is in agreement with research done by Leondari, Magos, and Oikonomou (2014), which stated that when mortality was salient to subjects, dissimilar others were thought of in increasingly negative ways, and subjects were more prone to stereotypical thinking towards, and ethnic labeling of, outgroup members. These prejudicial and denigrative thoughts can lead to more aggressive

behaviors and even escalate further into violent conflicts and wars, that arise as a result of intergroup feelings of aggression and negativity towards the other.

The next major part of terror management theory is that the terror individuals feel as a result of mortality salience leads them to adhere to social and cultural norms, and find ideologies, political views, religions, or a combination of belief systems, to act as psychological buffers to their death anxiety. Finding these psychological buffers is an essential facet of managing an individual's terror concerning their death anxiety. When an individual's mortality becomes salient, their death anxiety increases and their overall health and well-being decreases, if the individual does not have adequate psychological buffers in place (Juhl & Routledge, 2016). This finding demonstrates the importance of aligning with cultural, social, religious, or political views that can serve as a means of buffering the terror individuals feel upon contemplating their inevitable deaths. In particular, religions and religious beliefs have exhibited an excellent ability to manage an individual's terror. As stated in Beck's (2004) findings, there is significant empirical evidence that demonstrates how religion serves as a valuable defense mechanism for many individuals as it pertains to managing their existential terror and dread. Human beings are uniquely aware of their inevitable deaths, and religions typically provide beliefs that cannot be confirmed or denied. This aspect of undeniability of beliefs keeps individuals' fear of death at a safe distance and does not allow for those beliefs to be shattered, and consequently cause individuals to feel the full terror of knowing they are inevitably going to die (Vail et al., 2010). Religious beliefs often offer some concept of immortality, such as the idea of a soul, as discussed in Jesse Bering's (2006) research in the introduction above. From the research of Jonas and Fischer (2006), they found that individuals associated with belief systems that offer a form of

literal or symbolic immortality, in order to deal with their death anxiety. The idea that a spiritual element of the human being can live on forever, even while the physical body inevitably dies, is directly connected to terror management theory. By believing in some form of afterlife, human beings actively protect themselves from the terrifying anxiety they feel regarding their inevitable deaths (Vail et al., 2010). An important note to add on to this section is that secular cultural beliefs can help individuals deal with the salience of their mortality in the same way that religious beliefs can. Interestingly, Heflick and Goldenberg (2012) revealed that atheists were psychologically buffered from their death anxiety via their secular worldviews if those worldviews were challenged by others, which works similarly to how religious individuals were psychologically buffered from their death anxiety if their religious beliefs and values were challenged. This evidence helps tie in that religion is not the only psychological buffer that individuals employ, but rather one of many cultural, religious, and ideological belief systems that help prevent the dread individuals feel as a result of their terror management-related death anxiety.

Furthermore, individuals' levels of religiosity can affect the amount of death anxiety they feel. An interesting result came out of a study done by Jong et al. (2018), which stated that the most religious and the least religious subjects displayed lower levels of death anxiety, while subjects who were more uncertain about their faith, or were in between being very religious or being very non-religious, experienced higher levels of death anxiety. In other words, individuals who are intrinsically religious or non-religious, and live their lives according to those intrinsic beliefs, are less likely to experience higher levels of death anxiety. Conversely, individuals who are more extrinsically religious, and are uncertain about their beliefs yet still hold onto them

loosely in some way, tend to experience higher levels of death anxiety along with that uncertainty. When tasked with pondering their mortality, individuals tend to rate extrinsic goals such as wealth and fame as less important (Kosloff & Greenberg, 2009). If individuals are uncertain about their beliefs and more attached to extrinsic goals, then when they are faced with a terror management crisis, they are more likely to experience the negative effects of terror management. This negative effect arises due to the lack of a solid psychological buffer, and because the extrinsic goals they value are inherently less valuable when considering the fact that they will inevitably die someday. This is evinced by the fact that extrinsically religious individuals experience more spiritual struggle than intrinsically religious individuals do, which leads to a breakdown in their ability to manage the terror they feel concerning their inevitable deaths (Edmondson, Park, Chaudoir, & Wortmann, 2008). This element of spiritual struggle can also be closely linked to research on attachment style. For example, anxiously attached individuals who are motivated by self-enhancement, or those who are more likely to struggle with their religiosity and be extrinsically attached to their religion, responded defensively when their worldviews were challenged following consideration of their mortality (Hart, Shaver, & Goldenberg, 2005). This finding sheds further light on the connection between uncertain and anxiously attached individuals, to extrinsic religiosity and greater spiritual struggle. The uncertainty of these individuals' beliefs causes a decrease in their well-being, and an increase in their depressive symptoms due to the lack of a robust psychological buffer against their innate death anxiety (Edmondson et al., 2008). For these extrinsically religious semi-believers, their religiosity increased with higher levels of death anxiety, while for intrinsically religious believers, as their religiosity increased and they became more aligned and satisfied with their

belief system, their death anxiety decreased dramatically (Jong et al., 2018). This is an important statement that should not be overlooked. It differentiates between individuals who cling to their religion or belief system extrinsically, or solely to act as a psychological buffer to their death anxiety, and individuals who deeply live out the values and core principles of their faith or beliefs without regard to how much it buffers their psychological dread.

The point of this thesis is not to discredit religion or to discard it merely as a means for individuals to protect themselves from the terror they feel regarding their inevitable deaths. Instead, what the evidence from these studies reveals, is a defined separation between those who intrinsically stay true to their beliefs, whether religious or secular in nature, and those who extrinsically latch on to a belief system in order to protect themselves from their death anxiety, and feel justified in their denigrative actions and feelings towards outgroup members. Whether intrinsic or extrinsic, the effects of mortality salience on individuals are directly correlated with their prevailing cultural, religious, or ideological beliefs and values, and correspond with positive or negative consequences based on what those values are (Hui, Chan, Lau, Cheung, & Mok, 2014). While much of this section has focused on the potential negative consequences that can result from terror management, studies have demonstrated that individuals who intrinsically live the values of their religion or belief system, can, in fact, acquire many positive benefits from their religious or secular beliefs, as a result of terror management (Jonas & Fischer, 2006). This study from Jonas and Fischer (2006) also provided evidence that intrinsically religious subjects did not feel aggressive towards, or think stereotypical or racist thoughts about, outgroup members when tasked with pondering their mortality. These intrinsically religious individuals did not act defensively when their mortality was salient, as opposed to more extrinsically

religious individuals, who responded in defensive and aggressive manners towards outgroup members when asked to consider their mortality (Jonas & Fischer, 2006). These analyses help contribute to the idea that mortality salience can direct people into more positive and open mental states towards both ingroup and outgroup members, and not merely result in negative consequences in all situations when mortality is salient (Vail et al., 2012).

As seen in the previous paragraph, the effects of mortality salience can lead individuals towards hostility and intergroup conflict, but also have the potential to develop positive relationships between groups and enhance fairness and peace between ingroup and outgroup members (Jonas & Fritsche, 2013). This begs the question of what personality traits and group traits can be identified as those that enhance positive intergroup relationships, as opposed to those personality traits and group traits that promote ingroup cohesion and outgroup denigration in response to the terror felt as a result of mortality salience. This question regarding personality traits and reasons for alignment with particular religious, cultural, or ideological worldviews leads directly into moral foundations theory, which is first explained and then explored in further detail in the following section.

Moral Foundations Theory

In the early-2000s, psychologists and anthropologists such as Jonathan Haidt, Craig Joseph, and Jesse Graham, began developing the roots of moral foundations theory. They outline care vs. harm, justice vs. cheating, ingroup loyalty vs. betrayal, obedience to authority vs. subversion, and purity and sanctity vs. degradation, as the five foundational elements of the theory. These five elements are measured via the Moral Foundations Questionnaire, which is a rigorously validated and reliable measure that assesses how aligned an individual is with each of

the five moral foundations (Graham et al., 2011). The ideas and work of moral foundations theory were spread further through both academic and non-academic communities when Haidt published his book, *The Righteous Mind: Why Good People are Divided by Politics and Religion*, in 2012 (Haidt, 2012). The book discusses human morals and how morality relates to individuals' political, religious, cultural, and ideological worldviews and alignments. Moral foundations theory was intended as a framework to discuss individual differences in cultural worldviews, but research has developed around not only differences in cultural views, but also differences in political, religious, and other ideological viewpoints.

Within the five moral foundations, there are two distinct subgroups or domains, namely: individualizing moral foundations and binding moral foundations. The individualizing moral foundations are considered to be care vs. harm, and justice vs. cheating, while the binding moral foundations are considered to be ingroup loyalty vs. betrayal, obedience to authority vs. subversion, and purity and sanctity vs. degradation (Clark et al., 2017). Many studies have been conducted in order to identify relationships between individuals' moral viewpoints and their political, religious, and humanitarian views. For example, in a study that assessed subjects' alignments with the different moral domains and their related prosocial behaviors, the more a subject aligned with the individualizing moral foundations, the more progressive and prosocial they were in terms of their performance within an economic exchange game (Clark et al., 2017). In other words, individuals who endorsed the individualizing moral foundations more highly than they endorsed the binding moral foundations, tended to exhibit higher levels of prosocial behavior towards other individuals.

Furthermore, much research has looked into how an individual's endorsement of the various moral foundations predicts their political leanings, with many studies producing significant results. In work done by Barnett, Öz, and Marsden (2017), the researchers found links between moral viewpoints and political ideologies. Their results indicated that conservatives, or more right-leaning individuals on the political spectrum, tend to endorse the binding moral foundations over the individualizing moral foundations. Conversely, liberals, or more left-leaning individuals on the political spectrum, tend to endorse the individualizing moral foundations over the binding moral foundations (Barnett et al., 2017). Following along with the findings of this research study, Graham, Haidt, and Nosek (2009) concluded that conservative individuals typically uphold all five of the moral foundations, but identify the most with binding moral foundations, while liberal individuals continually align themselves more so with the individualizing moral foundations, and less so with the binding moral foundations. An exciting conclusion found by Klasios (2012), was that these divisions between conservative individuals and liberal individuals in their differing alignments with the five moral foundations were consistent across all countries studied. The importance of the connection between an individual's endorsement of either the individualizing moral foundations or the binding moral foundations, and their political, religious, and ideological viewpoints, cannot be understated. By understanding how individuals' moral intuitions affect their political beliefs and cultural worldviews, moral foundations theory ties back to the literature presented in the previous section regarding terror management theory. The connection comes in terms of how individuals adopt certain religious, political, and other ideological worldviews, in order to psychologically buffer themselves from their death anxiety. This idea directly relates to the research on moral

foundations theory, which reveals how human morality impacts individuals' worldviews and their opinions of outgroup members.

Moral foundations theory has demonstrated a keen ability to predict an individual's alignment with specific moral and social issues such as abortion, immigration, and same-sex marriage, even more so than an individual's age, gender, religiosity, or political or ideological beliefs could predict (Koleva, Graham, Iyer, Ditto, & Haidt, 2012). While many of these other factors are positively related and have an impact on individuals' views, the results of this study explain that individuals' moral inclinations unite them in their ideological beliefs more strongly than these other factors do (Koleva et al., 2012). It is intriguing to find that an individual's moral beliefs play a greater role in shaping their political, religious, and ideological views, than do other factors commonly thought of as having major direct impacts on what ideals individuals align themselves with. For example, individuals who identify more with the binding moral foundations, and subsequently align more with conservative social and political ideology, tend to be positively associated with homophobia (Barnett et al., 2017). In the same study done by Barnett et al. (2017), as was previously stated, adherence to the binding moral foundations greatly predicted an individual's positive correlation with feelings of homophobia, whereas adherence to the individualizing moral foundations tended to moderate that connection, and significantly decrease the strength of the relationship between the individual and homophobia.

What the results of these studies exemplify, is how individuals who align similarly with the various moral foundations, form groups based around those shared religious, political, or ideological viewpoints. General moral intuitions of groups have been shown to impact the groups with which an individual associates themselves. From the studies cited above, political

ideologies, religions, and other cultural groups serving as psychological buffers to death anxiety display how tribal communities are formed around shared morals, values, and belief systems. These tribal groups that form can provide safety, protection, and psychological defense mechanisms to their members (Klasios, 2012). Without respect to the individualizing moral foundations or the binding moral foundations, individuals create tight, ingroup bonds with other members, which coincidentally help to solidify and corroborate their moral and cultural ideals. While these group formations produce positive benefits for individual members, there can also be negative consequences of stout ingroup cohesion, which can lead individuals to reject reasonable and factual claims that stand as challenges to their already-formed morals, ideas, and beliefs (Klasios, 2012). The binding moral foundations have proven to bring people together in positive ways to help whole communities thrive, but have also proven to promote favoring ingroup members over outgroup members and increase justifications for violent conflicts and wars (Smith, Aquino, Koleva, & Graham, 2014). From these conclusions, the apparent connection between moral foundations theory, group formation, and terror management theory becomes clearer. As groups form around shared moral intuitions, and opinions of outgroup members inevitably challenge members' views, their mortality becomes salient, and feelings of aggression towards outgroup members can arise. How these feelings are dealt with, depends on whether an individual lives out their belief system intrinsically or extrinsically, and also, on whether an individual more closely aligns with the individualizing moral foundations or the binding moral foundations. Studies have revealed that higher endorsement of the binding moral foundations relates with higher support for aggression and violent actions towards outgroup members, as well as higher support for preventing help to outgroup members in need when

individuals' moral viewpoints were called into question (Smith et al., 2014). The binding moral foundations can lead to negative and detrimental consequences. The results of this study display how intergroup conflicts can arise, and frequently become violent. Adherence to the binding moral foundations typically leads to the denigration of outgroup members when an individual's mortality is salient unless they are measured to have a strong moral identity (Smith et al., 2014).

While increases in the binding moral foundations predict adverse negative thoughts and behaviors towards outgroup members, higher endorsement of the individualizing moral foundations typically predicts more significant support for human rights and prosocial behavior (Stolerman & Lagnado, 2018). As previously mentioned, individuals who identify more with the individualizing moral foundations over the binding moral foundations align themselves the greatest with the intuitions of care vs. harm and justice vs. cheating. Therefore, the fact that these individuals display more support for human rights causes, and advocate for prosocial behavior, makes sense because care for others, justice, and fairness for all, are the moral foundations that they identify with the most. One interesting study done by Napier and Luguri (2013) exhibited that when subjects were tasked with thinking abstractly as opposed to thinking concretely, they increased their endorsements of the individualizing moral foundations, and decreased their endorsements of the binding moral foundations. As subjects thought more about general ideas and concepts, and less about specific details and rigid structuring of rules and laws, they were more likely to enhance their alignment with the individualizing moral foundations. This finding is important because it provides evidence that an individual's identification with the binding moral foundations and the individualizing moral foundations can change based on varying thoughts about the world, even within a single individual. Understanding this ability for an

individual to change their endorsements of the moral foundations is critical. This potential for change is paramount to believing in specific possible interventions that could increase an individual's alignment with the individualizing moral foundations, and decrease their alignment with the binding moral foundations. This significant shift in moral intuitions could decrease an individual's adverse negative reactions towards outgroup members when their mortality is made salient, while simultaneously increasing their support for human rights and prosocial behavior.

Alignment with ideological groups can play a significant role in an individual's identity. Key aspects that underlie the unification of individuals who endorse similar moral values and ideals are the common meanings, desires, and personal histories of those individuals (Haidt, Graham, Joseph, 2009). One such group that displays high levels of unity in their beliefs and values, as well as overwhelming support for the binding moral foundations, is the group of individuals who identify with right-wing authoritarianism. Individuals who align with right-wing authoritarianism tend to hold the highest level of rigid moral standards and consequently tend to lash out the most at individuals, particularly outgroup members, who do not abide by their high moral code (Milojev et al., 2014). For this thesis, right-wing authoritarianism was chosen as an example in order to elaborate on how individuals who identify with this ideology demonstrate the principles of terror management and moral foundations. In the United States and other countries, the ideas of 'whiteness,' white hegemony, and firm white nationalist identity formation have been linked to right-wing authoritarianism (Hughey, 2010). Right-wing authoritarianism refers to individuals who show strict obedience to authority, submission to group authority figures, and who typically align with fundamentalist religious ideas as well as extremely conservative political views. Due to these characteristics, they often act out aggressively and prejudicially towards outgroup

members who challenge their cultural worldviews (Hasta & Karaçanta, 2017). Various dimensions of right-wing authoritarianism have been studied, including authoritarianism, conservatism, and traditionalism. These three dimensions serve as ideological expressions of individuals who seek security and safety of the group, over the autonomy and freedom of the individual (Duckitt, Bizumic, Krauss, & Heled, 2010). In other words, right-wing authoritarians exemplify what it means to emphasize the binding moral foundations over the individualizing moral foundations.

The following section explains the connection between white nationalism and right-wing authoritarianism in depth. These topical examples help to display the downsides of terror management-related group alignment, and how higher levels of endorsement of the binding moral foundations can lead to increased adverse outcomes towards outgroup members when mortality becomes salient.

White Nationalism and Right-Wing Authoritarianism

An increase in attachment to white identity and white supremacy has been documented over the last few decades. With the rise of the internet and the world wide web, white nationalist and supremacist movements have utilized social networks to strengthen their communities and recruit more members to their digitally enhanced, racist world (Back, 2002). Through the internet, individuals no longer have to worry about being unable to find those who share their views in their local communities, because there are global communities online that individuals can join to embolden their ideas and feel confident in what they believe. The digitization and globalization of the world community have produced many benefits and positive connections, but unfortunately has also enabled the re-emergence and strengthening of dangerous far-right,

racist, nationalist groups that sow fear and hate through the internet. Moreover, white nationalist and supremacist groups have transitioned from in-person pamphlets to the widespread and wide-reaching web of the internet to recruit new members actively and spread their messages concerning ethnicity, gender, sexuality, and the importance of white racial identity above all else (Wojcieszak, 2010). Through complex marketing narratives, white supremacist groups weave nationalist ideas, religious beliefs, and concepts of responsibility and loyalty to the group into white racial superiority in order to develop uniting foundations that purport to align with potential members' cultural worldviews and belief systems (Adams & Roscigno, 2005).

White nationalist groups' digital outreach programs prey on concepts related to terror management theory and moral foundations theory since they know that individuals seek to adopt group affiliations that share their moral intuitions. By acknowledging the fear towards outgroup members that many potential recruits naturally feel, white supremacist organizations can get their digital "foot in the door." From there, they begin tying concepts of white racial superiority into the individual's desires, fears, and personal causes, while simultaneously calling on them to take a stand to protect the sanctity and validity of who they are as inherently high-status white individuals. White nationalist and supremacist groups purport themes of awakenings to white racial identity and white superiority while tying those narratives into potential members' personal stories and experiences with race (Schafer, Mullins, & Box, 2014). By detailing personal narratives of individuals who have joined white nationalist groups, the group leaders can compare these narratives to those of potential recruits and help them along in their awakening to purportedly self-evident truths about race and white supremacy. These twisted individual awakening narratives lead to beliefs of the superiority of the white ingroup and inherent need to

denounce and denigrate other outgroups, especially those who do not abide by the same moral code. This notion explains how concepts of identity are often connected with aggression and violence towards, hatred of, and separation from other groups considered to be incorrect in their beliefs, and inherently beneath that of an individual's groups (Finlay, 2007).

Another interesting finding from the same Finlay (2007) study revealed that nationalist and right-wing authoritarian group leaders seek to discredit individuals who interact with other groups, or who do not agree with more aggressive actions taken against outgroup members. By doing so, white nationalist and right-wing authoritarian groups can discount unpopular opinions within their ranks, and subsequently develop environments where adherence to the group ideals takes priority above all else, and where dissenting ingroup members are punished. Therefore, these organizations create strong ingroup cohesion among members as well as groups based on censoring and diminishing dissenting opinions. The ideals of ingroup cohesion, discrediting of dissenting members, and upholding of white nationalist and right-wing authoritarian sentiments, lead to the formation of groups at-risk of extraordinarily hostile and violent actions towards outgroup members as a result of terror management.

Typical recruits targeted by these organizations are individuals who identify with right-wing authoritarianism ideology. They tend to be white males with lower levels of education, more conservative political views, and greater alignment with nationalist sentiment. Furthermore, right-wing authoritarianism has been shown to relate strongly with more negative feelings towards outgroup members (Anderson & Ferguson, 2017). Individuals who identify with right-wing authoritarianism also score high on the Attitudes Toward Violence Scale signaling implicit positive attitudes towards aggression and violent actions (Benjamin, 2006).

While these targeted individuals often do not display high levels of overt racism, they hold racially ambivalent views which white nationalist groups can target and sway in a more racist direction (Flemmen & Savage, 2017). White supremacist and nationalist groups prey on these individuals' negative attitudes towards outgroup members as a means of recruitment, in order to help them find common beliefs and morals among other similarly aligned individuals. Thus, the similarities between right-wing authoritarianism and individuals' identifications with conservative and white nationalist ideologies, indicate a secure connection and overlap between the two. Right-wing authoritarians, who overwhelmingly align with the binding moral foundations, value respect for cultural norms and laws. In turn, these individuals tend to positively relate to attitudes of prejudice towards outgroups and feel more aggressive towards those who break cultural norms (Bilewicz, Soral, Marchlewska, & Winiewski, 2017). This vigilance concerning the violation of social norms represents how individuals who identify with right-wing authoritarianism display extremely conservative views as a means of dealing with the conflictual terrors they feel. For example, right-wing authoritarianism positively predicts feelings of both racial and homosexual prejudice since they view non-white, and non-straight individuals as violations to their cultural norms (Laythe, Finkel, & Kirkpatrick, 2001; Wylie & Forest, 1992). Since right-wing authoritarians value the binding moral foundations so strongly, one of which is ingroup loyalty, when outgroup members challenge or break the norms of their group, right-wing authoritarians support prejudice, racism, and discrimination towards those outgroup members and their respective groups (Hasta & Karaçanta, 2017).

The re-emergence of nationalist and nativist politics has increased in the last few decades in many prominent European countries as well as in the United States. One needs to look no

further than the Brexit ordeal concerning the United Kingdom removing themselves from the European Union, due to not wanting to accept more immigrants fleeing crises in their home countries, or current President of the United States Donald Trump threatening to close borders, build walls, and separate families, all in the name of safety and preserving the sanctity of the nation and its 'rightful' members (Keskinen, 2018). These crises of fearful white hegemonic societies lashing out at immigrants, asylum seekers, or even non-white members in their own countries, fit perfectly into the framework of terror management theory in terms of how individuals react when their associated ideological group, in this case, white hegemony, is 'threatened.' In research done by Crowson, DeBacker, and Thoma (2006), the researchers found strong correlations between right-wing authoritarianism and support for the post-9/11 war on terror, as well as between right-wing authoritarianism and approval of human rights restrictions and torture. 9/11 was a horrible act of terrorism and violence; that point is not being disputed. What these conclusions dictate, however, is how individuals who align themselves highly with white nationalist ideology and right-wing authoritarianism are the most prone to react violently towards an entire group they feel represents the individuals who perpetrated the acts of violence towards them, which in this case were jihadist Muslims. Not only were military operations deployed in the Middle East, but Muslims throughout the United States were held or detained without cause as direct violations of their human and civil rights as lawful citizens of this country (Crowson et al., 2006). This fact illuminates how nationalist countries that value the binding moral foundations, specifically ingroup cohesion and loyalty to group above all else, can even turn on peaceful citizens in their societies out of terror management-related fear. Many times, these white hegemonic societies lash out against outgroup members merely because they are

non-white, non-majority, non-hegemonic individuals who are perceived as non-native even if their families have lived in the United States for many generations. The desire to find the perpetrators and prevent any future attacks led to a breakdown in the terror management system that produced extreme prejudice and degradation of outgroup members due to a perceived, yet non-existent threat those individuals posed to the sanctity and power of white hegemonic authority.

Hegemonies refer to when a single group of people holds disproportionately significant influence and authority over the cultural, ideological, religious, and economic governance of a country. As is the case in the United States as well as in many other countries all around the world, that single group of people holding power and influence tend to be white individuals. It is not surprising to find that white individuals who identify more with the binding moral foundations, and therefore tend to endorse right-wing authoritarianism, are the individuals who latch on tightly to this idea of white hegemony. White, right-wing authoritarians usually identify with more dangerous worldviews and consequently align more with ideas of ingroup cohesion, group dominance, the security of the whole, and conservative social traditions that value the binding moral foundations over the individualizing moral foundations (Lee, 2013). Within the scope of terror management theory, it makes sense that these specific white individuals typically are more nationalist and racially exclusive because their group, the white hegemony, is of high status and they do not want that status to be diminished by individuals of other races, ideals, or beliefs (Carter & Pérez, 2016). Furthermore, this study from Carter and Pérez (2016) revealed that higher levels of nationalist and nativist sentiments in white individuals who identified highly with their whiteness led to increases in outgroup member aggression unless the outgroup

members were white. This finding is intriguing because, in the fearful immigrant stories that persist throughout conservative news outlets in the United States, they almost exclusively focus on non-white immigrants of color coming from Latin America, South America, Africa, and the Middle East, but hardly ever, if at all, focus on white immigrants coming from Western Europe, Eastern Europe, Russia, or even relatively whiter immigrants coming from predominantly non-white countries.

While the makeups of the United States and other countries have become increasingly multicultural and pluralistic in recent years, Bery (2014) argues that the idea of multiculturalism is a farce controlled by the white hegemony. Instead of promoting the legitimate support and inclusion of other cultures, it only half-heartedly does so while simultaneously strengthening the epistemological practices of white nationalism and supremacy. White individuals who align highly with their white racial identity, view multiculturalism more as non-white individuals acculturating to the white hegemony, than the actual combination and integration of white and non-white cultures and beliefs. Through acculturation, non-white individuals no longer serve as a threat to white individuals since they now are subscribers to and subjects of white supremacist society (Liu et al., 2019). Furthermore, by reducing the threat that true multiculturalism poses to the white hegemony, white individuals who perpetrate these ideals preserve their sense of security and reduce the uncertainty and terror they feel as a result of their mortality becoming salient. Krell (2016) discovered that when communities become increasingly white and homogenous, individuals within those societies tend to become more complacent and less concerned with political affairs. However, increases in racial diversity correlated with higher donations to political campaigns by white individuals (Krell, 2016). These findings display

motivations for white individuals' donations to political campaigns, and how they perceive increased racial diversity as a threat to their white hegemonic societies.

In an interesting study that looked at highly educated white student leaders and their language concerning race, Foste (2019) found that high-status white individuals worked to present themselves as racially innocent, competent individuals, instead of providing any worthwhile criticisms of modern racism and movements towards white nationalism and supremacy. They projected themselves as cognizant, intelligent individuals who were above the problems of whiteness and white identity, and viewed themselves as individuals that other whites should strive to become in terms of their racial awareness (Foste, 2019). These studies exhibited the inventive ways that white individuals use in order to circumvent authentic discussions of race, which reveal their underlying commitment to the preservation of white supremacy and structural superiority over all other outgroups who seek racial and ideological justice and equality (Mueller, 2017). By failing to criticize racism, and focusing more on how pure and racially aware white individuals are, white supremacy is prolonged and propagated as an undercurrent of content-lacking discussions regarding structurally engrained racism. Instead of having valid and progressive discussions of race, white individuals across the political and social spectrum seek to gain "color capital" to reduce their sense of white debt and prevent any opportunity for someone else to suggest they are racist (Mills, 2013). By using non-white individuals only as tokens to separate themselves from the possibility of being labeled racist, individuals serve only to further embed ideas of white racial superiority and supremacy over all other non-white outgroups. Moreover, studies have evinced that feelings of white nationalism, white privilege, and white racial identification, are merely embodiments of pathological

narcissism that display the epitome of individuals' desires to feel triumphant in who they are and avoid feelings of disgrace or denunciation (Miller & Josephs, 2009). By striving to avoid challenges to their beliefs, individuals inherently seek to form greater ingroup cohesion which leads to further aggressive feelings towards outgroup members who challenge their views and beliefs.

An exciting recent development in the narrative of whiteness and right-wing authoritarianism is the idea of post-racial white victimization. This concept of white victimization due to immigrant and non-white groups infringing upon what white individuals have historically considered to be "their" domains, reveals an essential factor that emboldens and strengthens white nationalist groups which form around individuals' shared whiteness and superiority. Increasing numbers of white individuals feel that they are now the oppressed group in the United States, and they believe that many newer policies and laws are discriminatory against them (Hughey, 2014). Due to these feelings of oppression, white nationalist groups have employed the use of phrases and terms from the Civil Rights movements of the 1960s to describe their circumstances. However, these refrains are not being used as they were in the past to support non-white individuals and advocate for their equal civil rights. Instead, white nationalist groups and their members have misappropriated this rhetoric to strengthen and galvanize their communities, which ironically leads to the denigration of outgroup members who, more often than not, are individuals of color that were once supported by the very same civil rights language (Matias & Newlove, 2017). These conclusions connect with results found by Sengupta, Osborne, and Sibley (2019), which state that when individuals support ideas about national superiority, they are trying to cope with the terror they feel from perceived threats that cause them to think

their group, in this case, the white hegemony, is being infringed upon by outgroups and systematically deprived of what is rightfully theirs. Interestingly enough, internal divisions within white society due to the stratification of income levels and social status have further permeated hostile nationalist and racist ideals purveyed by these communities. However, the more disenfranchised white individuals have surprisingly shown to be less overtly racist than more elite white individuals, but show more identification with white nationalist ideals and the binding moral foundations (Flemmen & Savage, 2017).

In line with ideas from terror management theory and moral foundations theory, Leak and Randall (1995) found that individuals who prescribe to right-wing authoritarianism showed an inverse relationship with mature religious attachment. The ideas of mature religious attachment tie back to the ideas of intrinsic vs. extrinsic religious, political, or other ideological beliefs. Intrinsically attached individuals live their beliefs and ideals in their daily lives and are not attached to their belief system for any exterior gains or benefits. Conversely, extrinsically attached individuals are those more uncertain individuals who attach to a religion, political party, or other ideological belief systems solely in order to deal with the conflictual terror they feel inside, and in order to separate themselves from other non-believers or outgroup members to convince themselves that their choice of belief system is correct and just. Right-wing authoritarian views combined with immature attachments to, and extrinsic connections with, religion and other cultural and ideological worldviews, result in individuals with strongly ethnocentric nationalistic attitudes (Radkiewicz, 2019). Furthermore, as shown previously, right-wing authoritarianism indicates positive associations with the denigration and exclusion of dissenting outgroup members. Right-wing authoritarians are often members of Christian

religious sects, which employ absolutist belief systems that put every issue into black and white, or good and bad terms. As a result of absolute belief frameworks, individuals within these religious belief systems develop strong ingroup cohesion and ingroup favoritism, while also promoting the desecration of outgroup members and their beliefs (Tourish & Wohlforth, 2000). An important aside is that Christian religious traditions correlate strongly with more close-minded, fundamentalist, and right-wing authoritarian viewpoints, which provides further evidence to the connection between absolutist religious beliefs and right-wing authoritarianism (Watson et al., 2003). Moreover, when religious individuals within these absolutist moral frameworks have their religious, political, or other ideological beliefs challenged or threatened, they tend to maintain support for their beliefs over factual scientific data when there is a perception of threat or conflict (Westman, Willink, & McHoskey, 2000). This prioritization of beliefs over scientific data reveals how right-wing authoritarians typically deal with conflicts, and can lead to even further strengthening of ingroup bonds and favoritism to protect those beliefs that are paramount to the core of their beings. Additionally, right-wing authoritarians seek to legitimize methods of separation and superiority to prolong the inequalities between themselves and the outgroups they feel aggressively towards (Satherley & Sibley, 2018). By extending the lifetime of inequalities between their ingroups and the outgroups they feel aggressive towards, individuals effectively manage their terror and maintain a sense of security concerning their place in life as well as their lasting legacy that will live on beyond their inevitable physical deaths.

Following this in-depth review of the rise of white nationalism and its ties to right-wing authoritarianism and the binding moral foundations, what was lacking was evidence of how to

reduce the aggression that tightly bound groups feel towards outgroup members who threaten their views, and how to increase an individual's affiliations with the individualizing moral foundations. Asbrock, Christ, Duckitt, and Sibley (2012) found that intergroup contact serves as an effective means of improving relationships and attitudes between groups, especially for individuals who identify highly with right-wing authoritarianism. While this finding is significant, if individuals are not open to intergroup contact in the first place than those interactions will never occur. Therefore, the most crucial element in moderating the relationship between right-wing authoritarian individuals, the binding moral foundations, and dangerous world beliefs that lead to aggressive actions towards, and denigration of, outgroup members, is the personality trait of openness to experience (Dallago, Mirisola, & Roccato, 2012). In the next, and final, section of this intensive literature review, the science of psychedelics is analyzed as a potential antidote to the anger and aggression individuals feel towards outgroup members as a result of terror management. Studies have shown that even a one-time exposure to psychedelic substances in controlled, clinical settings can significantly increase individuals' openness to experience for extended periods (MacLean, Johnson, & Griffiths, 2011). These findings, and other incredible research studies being done within the re-emerging field of clinical applications for psychedelic compounds, are discussed in detail below.

Clinical Studies on the Effects of Psychedelic Compounds

Studies of psychedelic compounds have been conducted since the early 1950s. During the late 1960s and early 1970s, LSD and psilocybin, the active hallucinogen in magic mushrooms, experienced a massive emergence in counter-culture groups who vehemently opposed and protested the Vietnam War (Nutt, 2016). In efforts to quell the growing anti-war sentiment,

President Nixon banned psychedelic drugs based upon little backing from psychopharmacological research (Wark, 2007). In doing so, all government-funded laboratories studying the promising effects of psilocybin and LSD on a variety of mental health conditions were shut down. While many informal labs and studies of psychedelic compounds went underground to continue their research, it took almost 30 years for government-approved studies of psychedelics to re-emerge in the early-2000s (Grob et al., 2011). Even though many psychedelic compounds remain highly regulated substances, many of them have shown significant potential for treating a wide array of mental health problems, including issues due to mood and stress disorders, substance abuse, and anxiety and depression (Garcia-Romeu, Kersgaard, & Addy, 2016).

Many of these studies focus on using psilocybin, instead of LSD or other psychedelics such as MDMA (ecstasy) or mescaline (peyote), due to the natural component of retrieving the substance directly from the psilocybe mushroom spores that secrete the psilocybin. Psilocybin itself is an agonist that works on the serotonin receptors in the brain, and it can be found naturally in psilocybe mushrooms. For centuries, indigenous cultures all over North and South America used psilocybe mushrooms for religious purposes and as alternative healing medicine (Johnson, Sewell, & Griffiths, 2012). This use of psychedelic drugs as a means of connecting with the divine and engaging in religious ceremonies came from human curiosity and desire for insight into the spiritual and metaphysical realms of human existence (Móró & Noreika, 2011). Later on, it was thought that by including self-exploratory drugs such as psychedelic compounds in the therapy setting, individuals could gain more acceptance, understanding, and forgiveness for themselves and others (Grinspoon & Doblin, 2001). Critical studies conducted over the last

20 years have found clinically significant results for the potential of psilocybin to help alleviate a variety of mental health conditions, including death anxiety in terminally-ill cancer patients, obsessive-compulsive disorder, various addictions to drugs and alcohol, as well as promising studies looking at alleviating anxieties and fears related to post-traumatic stress disorder (Carhart-Harris et al., 2016). From research done primarily at the Heffter Research Institute, UCLA, Johns Hopkins, NYU, and a growing number of other research institutions and universities, psilocybin and studies of psychedelic compounds have made a comeback into the mainstream psychopharmacological study with consistently promising findings (Nichols, 2014). Furthermore, there are calls for medical specialists and psychiatrists to learn and understand more about psychedelic substances in order to help their patients benefit from them with the combination of psychedelic experiences and supportive psychotherapy to work through the various issues they face (Sessa, 2014). In order to make the power of psychedelics more visible in the medical and therapeutic communities, extensive research must be conducted to convince the powers that be to provide more support for, and encourage more innovation in, the area of psychedelics. The significant results of many of these studies are discussed further in this section, with implications for the importance of continuing future studies in this ground-breaking area of research.

As mentioned, some of the first significant studies done showing the effects of psilocybin were done on terminally-ill cancer patients. These patients felt increased terror and anxiety knowing that they only had a certain amount of time left to live. When provided with psychotherapy along with moderate to high doses of psilocybin in rigorously controlled clinical settings, where two therapists accompanied patients for the duration of the 6 to 8-hour

experience, the cancer patients experienced substantial decreases in their feelings of anxiety and depression. Subsequently, patients experienced positive increases in their views on the acceptance of inevitable death, the quality of the life they have lived, and their levels of spirituality (Swift et al., 2017). A fascinating fact to consider with these studies is that each cancer patient only received a single dose of psilocybin, and the reductions in anxiety and depression remained significant even beyond 3 and 6-month follow-ups. Following these studies, participants discussed how their experiences with psilocybin led to visions and profound deep truths that helped them face their fear of death, and accept their cancer for what it was, without tying their identities directly to it (Swift et al., 2017). In other studies that researched the effects of psilocybin on terminally-ill patients' death anxiety, similar results evinced substantial reductions in feelings of anxiety and depression while finding significant increases in spirituality and quality of life metrics (Ross et al., 2016). The researchers found that as an additional therapeutic element to psychotherapy, psilocybin showed a significant ability to relieve stresses about inevitable death and bring more acceptance of existential problems.

Interestingly, while these studies have shown significant results at 3 and 6 months following a psilocybin session for individuals with advanced stages of cancer, healthy individuals have shown significant increases in positive mood, higher outlook on life, and increased spiritual meaning for more than a year after their psilocybin sessions (Young, 2013). What that finding signifies is the ability for psilocybin to not only help alleviate the suffering of patients struggling with a variety of conditions, but also for psilocybin to potentially enhance the lives and well-being of clinically healthy individuals. Studerus, Kommer, Hasler, and Vollenweider (2011) found that providing moderate to high doses of psilocybin to healthy,

thoroughly prepared individuals within a rigorously controlled clinical setting correlated with significant positive changes in moods, thoughts, and self-perceptions. Due to reduced amygdala activity resulting from the ingestion of psilocybin, healthy participants displayed significant amplifications in positive thoughts and moods, and generally felt more life satisfaction following their experiences with psilocybin (Kraehenmann et al., 2015). Moreover, participants in these studies often comment on the pleasurable and non-threatening nature of their psilocybin experiences, which corroborates the minimal amount of risk associated with psychedelic studies performed in well-controlled labs (Studerus et al., 2011).

Additionally, any adverse side effects or reactions to psilocybin experiences have proven to be easily managed through brief psychotherapy and follow up session support, and did not require any antidepressant or anxiolytic drug prescriptions. Krebs and Johansen (2013) also showed that psychedelics have not induced any long-term issues with mental or physical health, and are seen as non-addictive substances that need to receive a reduced pharmacological classification than that of their current stringent status as a Schedule I substance with a high potential for abuse. Aforementioned shoddy research prodded regulators more than 30 years ago to label psychedelics harshly, when in reality the research they based their decisions off of made many false claims and was not reviewed by the scientific community at the time. Johnson, Griffiths, Hendricks, and Henningfield (2018) determined that adverse side effects coming as a result of administering psilocybin are completely manageable when done in rigorously controlled clinical settings. The researchers suggest a new classification for psilocybin to be downgraded from a Schedule I substance to a Schedule IV substance due to the manageability of side effects in controlled lab settings concerning the use of psilocybin. One of the few minor side effects that

subjects occasionally report following ingestion of psilocybin is that of delayed-onset headaches post-session. However, the headaches were not severe and have consistently shown to be only temporary, and at most lasted for a day after ingestion of psilocybin (Johnson, Sewell, & Griffiths, 2012). Counterintuitively to what some believe, the use of psychedelic drugs correlated negatively with mental health issues, due to enhanced positive moods and more positively goal-directed behaviors (Krebs & Johansen, 2013; Kometer et al., 2012). In other research done by Johansen and Krebs (2015), the researchers found that lifetime psychedelic drug use had no correlation with intense psychological stress or suicidal thoughts and actions in the past year. Similarly, in their research concerning the use of psychedelics and suicidality, Hendricks, Thorne, Clark, Coombs, and Johnson (2015) indicated that use of psychedelics was negatively correlated with suicidality, and went so far as to say that psychedelic compounds could potentially help in preventing suicides. What these findings suggest is that individuals who experience psychedelics tend to have lower rates of mental health issues, and less suicidal thoughts, than the general population of individuals who do not partake in psychedelics.

Psilocybin has been found to significantly reduce the symptoms of a litany of mental health issues when used in controlled clinical settings. For example, psilocybin has proven to be effective in helping addicted smokers stay abstinent for long periods, including approximately 65% of participants who confirmed abstinence a full year after the one-time psilocybin session (Johnson, Garcia-Romeu, & Griffiths, 2017). Percentages that high are unheard of in studies looking at promoting smoking cessation in long-time addicts. Further research done by Bogenschutz et al. (2015), revealed that individuals' with clinically significant levels of alcohol dependence, who experienced psilocybin in controlled clinical studies, substantially decreased or

eliminated their alcohol use following the psilocybin sessions. This research holds importance for potentially developing interventions for smokers and alcohol abusers through the use of controlled psilocybin sessions as a means of reducing and eliminating their desires to smoke and drink. These significantly decreased levels of alcohol dependence maintained their significance even at 8-month follow-ups with participants, and align with findings from work done by Burdick and Adinoff (2013), which stated the therapeutic potential of psychedelic compounds to help alleviate addictions and substance abuse disorders. What Burdick and Adinoff (2013) did differently though, was differentiate the effects of actual long-term therapeutic potential from the self-contained effects of a drug-induced altered state of mind. What they found was that there are real benefits to psychedelic drug use on the human psyche beyond the 6 to 8 hour period in which the individual is in an altered state. This is an important distinction to know that the positive mental health benefits following experiences with psychedelic compounds last far beyond when the clinical session ends, and have been shown to last more than one full year following ingestion of psilocybin.

In addition to helping with alcohol and smoking addictions, studies of psilocybin administered in controlled clinical environments have revealed significant findings in the reduction of treatment-resistant depression (Montagne, 2007). Moreover, psilocybin has shown an ability to produce fast-acting, and long-lasting relief from repetitive, compulsive anxieties that occur with obsessive-compulsive disorder (Moreno & Delgado, 1997). Sewell, Halpern, and Pope (2006) found that use of psychedelics significantly reduced the pain and pressure felt from individuals who suffer from migraine and cluster headaches, while studies done by Tupper, Wood, Yensen, and Johnson (2015) displayed significant improvements in treating individuals

who suffer from post-traumatic stress disorder. This goes to show the vast and diverse number of mental health conditions that researchers are applying the science of psychedelic compounds too in the hopes of finding more significant long-term benefits in health and well-being for the millions of individuals who suffer from some form of mental illness or another.

When taken in controlled clinical settings, psilocybin brings about immensely positive feelings of joy and love, while also often changing an individual's identity in positive directions towards interconnectedness over individuality, and providing lasting positive changes in an individual's spirituality and their ability to forgive themselves and others (Belser et al., 2017). While creating immensely positive spiritual experiences for individuals who partake in psychedelic substances, psilocybin has also shown to dissolve an individual's ego and their ego-centric thoughts, which leads to a greater embrace of outgroup members and a better understanding of the oneness of nature and the universe (Bobbett, 2017; Nour, Evans, Nutt, & Carhart-Harris, 2016). Correlations between the vividness of colors and beauty and increased perceptions of subjective well-being were found in individuals following their psilocybin sessions (Carhart-Harris et al., 2012). Conversely, individuals who receive psilocybin in clinical studies have exhibited increases in emotional regulation and relief from negative thoughts and emotions. Furthermore, individuals have reported gaining significant personal meaning, and spiritual importance from their experiences taking psilocybin, as well as increased positive thoughts and behaviors, observed not only by participants, but by their community members as well (Griffiths, Richards, McCann, & Jesse, 2006)

Psilocybin sessions have brought about incredibly mystical and spiritual experiences for individuals, and have provided them with meaningful psychological insights that help them

better understand themselves, their fears, their anxieties, as well as the world around them (Carbonaro, Johnson, Hurwitz, & Griffiths, 2018). As Corbin (2012) described it, psychedelics brought mysticism and spirituality into the world of science and rigorous study, which allowed it to be subjected to the scientific method and open a path for meaningful research to discover relevant and essential findings in the field of psychedelics. Following in line with research done on the mystical and spiritual experiences reported by subjects, psilocybin research suggests that ingesting the hallucinogenic substance allows for more enhanced peak experiences as described by Maslow (Cummins & Lyke, 2013). These increased rates of mystical and spiritual peak experiences speak to the ability of psilocybin to promote self-reflection, and exploration of other ideas and potential truths, that can ultimately bring forgiveness and allow for more understanding between the self and the other.

In conclusion, after this incredibly in-depth literature review, I wanted to provide a few pieces of evidence that tie the four topics of terror management, moral foundations, white nationalism and right-wing authoritarianism, and controlled clinical studies of psychedelics together before integrating the ideas found in the above studies in the discussion section below. Kaufman (2016) described how psilocybin could be used as an antidote to white hegemony and terror-management related aggression towards outgroup members. By increasing relationality and inclining individuals towards more self-reflection and criticism of their deeply held beliefs and assumptions, psilocybin could serve as a potential antidote to the intense ingroup cohesion and denigration of outgroups that is seen in white nationalist and right-wing authoritarian organizations. Experiences with psilocybin also provide more significant feelings of death transcendence, which helps individuals cope with terror felt as a result of mortality salience, and

increase their prosocial behaviors, which in turn aligns more with individualizing moral foundations that help mitigate the fear and aggression individuals feel towards outgroup members who are perceived threats to individuals' beliefs and ideologies (Griffiths et al., 2018). Furthermore, by increasing divergent thinking and empathy for others, psilocybin experiences cause increases in the openness to experience personality trait, which as was laid out previously, has been shown to decrease associations between individuals and destructive right-wing authoritarianism ideals, while also increasing their emotional capacity for empathy towards others (Mason, 2019; Pokorny, 2017). Individuals who participate in psilocybin sessions have shown marked increases in openness to experience, as well as decreases in neuroticism, which allow for greater acceptance of the other and less desire to act out aggressively towards outgroup members (MacLean et al., 2011; Quevedo, 2009).

While no data was collected specifically for this study, the integration of the results of the findings mentioned above are discussed below, as well as ideas for further potential research in the area of psychedelics. While the science of psychedelics is currently being applied to an impressive amount of mental health issues, no studies have individually looked at the potential for psychedelic compounds to reduce terror management-related aggression towards outgroup members. For this reason, more research is warranted to pursue the ideas and theories detailed above in clinical settings, in order to test the hypotheses presented in this thesis, and promote more excitement around the promising field of psychedelics.

DISCUSSION

To summarize the findings and connections from all of the distinct elements of this thesis, terror management theory states that the internal conflict between individuals'

self-preservation instincts and their unique mortality salience leads to terror of unavoidable death, which can be mitigated through the adoption of cultural, religious, political, or other ideological worldviews (Greenberg & Kosloff, 2008). The groups that individuals choose to join, however, depend upon which subset of the moral foundations they align themselves with, namely the individualizing moral foundations or the binding moral foundations (Hadarics & Kende, 2018). As an example, white nationalism and right-wing authoritarianism were used to show how individuals who are extrinsically attached to the binding moral foundations are more susceptible to aggressive thoughts and actions towards outgroup members when their worldviews are challenged, and their mortality becomes salient (Hotchin & West, 2018). Dallago et al. (2012) then provided evidence that increases in the openness to experience personality trait moderated the relationship between individuals and right-wing authoritarianism, which served to decrease the strength of individuals' rigid right-wing views that could lead to more aggression towards outgroup members. Furthermore, MacLean et al. (2011) indicated that experiences with the psychedelic compound psilocybin in controlled clinical settings led to significant increases in individuals' openness to experience. This thesis was laid out in such a way to establish a clear connection between each of the four sections starting with terror management theory, then discussing moral foundations theory along with the examples of white nationalism and right-wing authoritarianism, and finally tying it all together with the potential psychopharmacological solution of psychedelics.

Through the use of psilocybin in controlled clinical settings, individuals are left with more open and accepting attitudes towards themselves and towards others, as well as more acceptance of the inevitability of their own deaths. By accepting death as an eventuality,

individuals are better able to cope with their internal conflicts and terror, and therefore less susceptible to feeling aggressive towards outgroup members who break with the individuals' norms and customs. Following experiences with psilocybin, individuals perceive others as less of a threat to their own literal or figurative immortality and therefore do not see a reason to lash out in ways they may have lashed out in the past.

For this reason, further research is merited concerning the potential for psychedelic compounds to alleviate terror management-related aggression towards outgroup members for individuals in white nationalist and right-wing authoritarian groups. Specifically, in these groups, studies using psilocybin could help to relieve the growing anxiety that many white hegemonic societies feel around the world and allow them to embrace and accept multiculturalism and integration of thoughts, ideas, and values. Perhaps, a reduction in feelings of white anxiety and perceived victimization could lead to a decline in the white hate crimes that have grown and become more public in recent years. Studies could be set up similar to other mortality salience studies, where participants are given initial questionnaires asking for their opinions of individual ingroup members and individual outgroup members, then they are given the experimental condition, and finally they answer follow up questionnaires asking similar questions about ingroup vs. outgroup members and their feelings towards those different individuals. If clinical researchers were to use a psilocybin session as their experimental variable, it is likely that the anxiety and aggression that participants feel towards outgroup members would greatly diminish following their experiences with psilocybin in a controlled clinical setting.

By increasing individuals' openness to experience for extended periods, psilocybin helps to align an individual more with the individualizing moral foundations over the binding moral

foundations. The openness they feel helps lead them to endorse things like justice and care for all over ingroup cohesion and absolute obedience to authority. As a result of more alignment with the individualizing moral foundations, individuals' death anxiety is greatly diminished, and they feel greater senses of love and unity and togetherness, which help to decrease terror management-related aggression towards outgroup members and bring more acceptance towards and interconnectedness of others' beliefs and values. Overall, if experiences with psychedelic compounds in controlled clinical environments lead to more openness, and if dangerous world beliefs and right-wing authoritarianism are moderated by openness, then psychedelic compounds, specifically psilocybin, could have great potential to increase individuals' openness and decrease the dangerous world beliefs they hold as a result of their right-wing authoritarian viewpoints.

There are many practical implications of this research, as well as many vital reasons why the science of psychedelics should continue to be studied. As previously stated, findings from this potential study could reveal ways to reduce terror management-related anxiety and towards outgroup members, or non-white groups in the case of white nationalism and right-wing authoritarianism. Moreover, there are critical potential applications for psychedelics in the medical field that should not be overlooked. Millions of Americans and other individuals around the world take antidepressant or anxiolytic medication every single day. Each month, these individuals return to the pharmacy or the doctor's office to refill their prescription, and many of them have done this each month, every month, for many years. What many are never told how to do though, is how to work their way off of these medications. Instead, they blindly continue refilling prescriptions by telling themselves that the drugs do help, when in fact, for many

individuals, they do not feel much improvement in their mental health as a result of taking these pills. The beauty of psychedelic compounds as a means of mental and spiritual healing is their ability to produce lasting positive effects on individuals who partake in them in safe, protected ways. Many drug-induced states are contained within the lifetime of the drug experience. Psychedelics, however, produce lasting effects far beyond the end of the typically 6 to 8-hour experience, and the resulting increases in positive moods, self-perception, and beliefs about others and the world can have a profound impact on an individual's life and significantly improve their mental and spiritual health. Without making too grand of claims, psilocybin has real potential for helping many individuals break out of the antidepressant prescription model, and free themselves from the burden of paying for and taking pills every day. While it seems counterintuitive to use a powerful mind-altering drug to help struggling individuals overcome their fears, anxieties, traumatic pasts, addictions, and depressive symptoms, the results of previous and on-going studies speak for themselves. The future of psychedelics as healing and freeing medicine is wide-open and full of promise. It is a future I look forward to taking part in helping create, in order to potentially allow for the alleviation of suffering of millions of individuals all around the world, and to decrease the violent group conflicts that are unfortunately seen and experienced in far too many places.

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