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THE SUPPRESSION-INCONGRUENCE MODEL OF EXTREMISM: INVESTIGATING EXTREMISM THROUGH A NEW LENS

Thesis submitted in fulfilment of the requirements for the

Degree of Doctor of Philosophy (Psychology)

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Declaration

I declare that this thesis has not been submitted as an exercise at this or any other university. I
declare that this thesis is entirely my own work.

Signed: _____  _____

Christie Tetreault

Statement of Contribution

The author of this thesis was responsible for leading all aspects of this research, including the study design, data collection, analysis and interpretation, the write-up of each of the four studies that comprise this thesis, and the dissemination of the study findings. The supervisor and Graduate Research Committee advised and provided support in conducting this research.

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List of Works

Below is a list of dissemination outputs, which have been derived from this thesis and during the PhD.

Publications

- Tetreault, C., & Sarma, K. M. (2021). Dark personalities and their sympathies towards state-sponsored extremism. *Behavioral Sciences of Terrorism and Political Aggression*, 1-20. <https://doi.org/10.1080/19434472.2021.2004197>
- Tetreault, C., Bates, E. A., & Bolam, L. T. (2021). How dark personalities perpetrate partner and general aggression in Sweden and the United Kingdom. *Journal of Interpersonal Violence*, 36(9-10), NP4743-NP4767. <https://doi.org/10.1177%2F0886260518793992>
- Tetreault, C., & Hoff, E. (2019). Influence of everyday stress: Mechanisms that elicit excitation transfer and dark behavior. *Journal of Aggression, Conflict and Peace Research* 11(3), 169-179. <https://doi.org/10.1108/JACPR-11-2018-0390>

Outreach and Other Publication Experience

- Tetreault, C., & Bates, E.A. (2022, July 14). "Parental Alienation: The psychological manipulation of children." *RTE*. <https://www.rte.ie/brainstorm/2022/0713/1309964-parental-alienation-psychological-manipulation-children>
- Tetreault, C. (2021, October 22). "Do You Really Know a Narcissist or Psychopath?" *RTE*. <https://www.rte.ie/brainstorm/2021/1020/1254859-narcissist-psychopath-sadist-psychology/>
- Tetreault, C. (2020, January 23). "7 Myths about Domestic Violence" *RTE*. <https://www.rte.ie/brainstorm/2020/0123/1110351-7-myths-about-domestic-violence/>

Works Under Review or in Preparation

- Tetreault, C., & Sarma, K.M. (under review at Social Science Computer Review). The morality behind supporting crowdfunding campaigns for eco-hacktivists.
- Tetreault, C., Van Rhoon, & Sarma, K.M. Cognitive rigidity: A predictive model of conspiracy mentality.
- Radosavljevi , D., Dini , B.M., & Tetreault, C. (under review at Violence and Victims)
Relations between intimate partner cyberviolence and dark tetrad traits among men and woman.

Tetreault, C., Bates, E. A., & Bolam, L. T. How dark personalities predict partner and general aggression victimization in Sweden and the United Kingdom

Tetreault, C., Van Rhoon, & Sarma, K.M. State-sponsored extremism, its predictors, and cognitive flexibility.

Tetreault, C., & Sarma, K.M. Does expressing yourself predict more positive emotional responses to negative news articles?

Tetreault, C., Foster, E.J., O’Sullivan, G., & Sarma, K.M. Mask wearing hesitancy, political alignment, and the dark personalities.

Van Rhoon, L., Byrne, M., Tetreault, C., & McSharry, J. The views and experiences of adults living in Ireland regarding the acceptability of a digital diabetes prevention programme: A qualitative content analysis.

Invited Talks

2022 – Extremism and the Dark Personalities. Invited Guest Lecturer in Talk Series for the University of Cumbria, UK

2021 – Do You Know the Dark Personalities? Invited talk by the NUIG Students Union

2021 – Spotting Toxic Relationships and the Psychology Behind Them. Invited talk by the NUIG Students Union

2021 – The Psychology of Extremism. Invited Guest Lecturer in Talk Series for the University of Cumbria, UK

2021 – Dark Personalities in Research. Invited Guest Lecturer in Talk Series for the University of Cumbria, UK

2017 – Spotting Dating Violence. Invited by NUIG PsiChi Chapter

Conferences

2021 – Forensics Division of the British Psychological Society – Online Oral Presentation: Does Suppression Lead to Extremism?

2020 – Forensics Division of the British Psychological Society – Oral Presentation: Does Suppression Lead to Extremism? Postponed to 2021 due to COVID.

2020 – Between Narcissism and Entitlement: Self Enhancement in Cross-Cultural Research – Oral Presentation: Partner and Non-Partner Aggression/Victimization and the Dark Tetrad: A Swedish and British Sample. Postponed due to COVID.

2020 – Between Narcissism and Entitlement: Self Enhancement in Cross-Cultural Research –
Oral Presentation: Suppression Effects and How Dark Tetrad Emerge in Extremism: A
New Model. Postponed due to COVID.

Public Outreach

2020 – Psychology of Genocide and Other Toxic Situations

2019 – Intimate Partner Violence: The Real Story

2019 – Psychopaths, Sadists, and Narcissists: Do You Really Know One?

2018 – Military Massacres

2018 – PubHD – Suppression-Incongruence Model of Extremism

Abstract

Introduction: Psychological and experimental research is increasingly contributing to our understanding of extremism. This thesis presents and investigates a potentially promising avenue of research in the area of extremism—a suppression-incongruence model that may contribute to the understanding of relevant processes that lead to extremist thought and behavior. The model amalgamates and expands upon existing models, integrating dispositional, cognitive, and behavioral facets, as well as other individual differences, to explicate the pathways to extremism. In the suppression-incongruence model, suppression and incongruence are bidirectional, meaning suppression of one’s thoughts, feelings, beliefs (TFBs), emotions, or behaviors can lead to incongruence, and incongruence between one’s TFBs, emotions, or behaviors can lead to suppression. The model hypothesizes that the longer one is then in the suppression-incongruence state, the more extreme the TFBs, emotions, or behaviors become. Ultimately, when the suppressed or incongruent TFBs, emotions, or behaviors are eventually “released,” a rebound effect arises, potentially leading to a more extreme response.

Aim: The primary aim of this thesis was to examine different aspects of the suppression-incongruence model with various forms of extremism: hacktivism (a portmanteau of hacking and activism), state-sponsored extremism (SSE), and (proclivity for) extreme cognitions.

Objectives: The overall objective of the program of research is to better understand the processes or pathways to radicalization and extremism. Each empirical study had its own objective. The objective in Study 1 was to investigate if pre-existing beliefs influenced participants’ bystander support for extremist behavior that aligned with those pre-existing beliefs. Ultimately, are individuals willing to support a group’s cause they already agree with regardless of the methods that the group uses (i.e., does the end justify the means)? This study was designed to assess whether or not pre-existing beliefs that aligned with the hacktivists would facilitate moral connectedness to the actors in the vignette. This moral connectedness then could predict greater willingness to provide financial support for the hacktivists’ cause. In Study 2, the main objective was to test if participants who were asked to suppress or express their opinions about the eco-hacktivism article from Study 1 would experience an increase or decrease in rebound effects. For Study 3, the objective was to examine dispositional traits as predictors for sympathies towards violent and non-violent forms of SSE. Scoring higher on the dispositional traits that were investigated (the Dark Tetrad—Machiavellianism, narcissism, psychopathy,

sadism—and right-wing authoritarianism) has also been theorized to be associated with regular behavioral suppression and an increased proclivity for antisociality. This study would allow examination of this suppression aspect of the suppression-incongruence model. The objective for the last study, Study 4, was to examine how suppression and cognitive rigidity predicted a proclivity for extreme cognitions. This would allow both protective and risk factors for having a propensity for more extreme cognitions to be examined. In terms of the suppression-incongruence model, this would investigate cognitive suppression predicting more cognitive extremism. The studies, taken together, test different facets and aspects of the suppression-incongruence model of extremism to better understand susceptibilities and pathways to radicalization and extremism.

Methods: In Study 1, an online cross-sectional study was conducted ($N = 350$) to investigate if hacktivists could garner bystander support. The study included an eco-hacktivism vignette and two morality scales. The vignette included three actors (the hacktivists themselves, their spokesperson, and a supportive social media commentator). Two morality scales were developed: one that probed moral judgement relating to the hacktivists and the other probed moral judgement relating to the spokesperson and social media commentator. Pre-existing beliefs on the importance of the environment and moral connectivity to these three actors were examined for their predictive power towards a willingness to donate to a crowdfunding campaign in support of the hacktivists. Using the hacktivism vignette from Study 1, in Study 2, participants ($N = 158$) were randomly assigned to three conditions to examine if they would experience rebound effects following instructions to suppress (Condition 1) or express (Condition 2) their TFBs about the hacktivism article. There was a control condition (Condition 3) where participants were given no instructions relating to expression/suppression of their TFBs. The rebound effects, both objective (number of intrusive thoughts) and subjective (positive and negative affect pre- and post-test) effects were analyzed for group differences. In Study 3 ($N = 398$), an online cross-sectional study examined how scoring higher on specific dispositional traits (Dark Tetrad and right-wing authoritarianism) that have been theorized to use suppression predicted a willingness to support four forms of SSE. In Study 4 ($N = 1,249$), a final online cross-sectional study was conducted to predict conspiracy mentality (i.e., proclivity for extreme cognitions) through traits and dispositional traits that theoretically increased cognitive rigidity and incongruence. The traits were suppression, sense of self, and critical thinking, and the

dispositional traits were the Dark Tetrad, right-wing authoritarianism, and collective narcissism. An exploratory theoretical model was developed, and the factor structure was assessed before testing the causal model.

Results: Findings from Study 1 suggest that different facets of moral connectedness to the three actors in the hacktivism vignette (Moral altruism with the hacktivists; Moral social connectivity with the spokesperson; and Moral behavioral intention with the social media commentator) predicted a willingness to contribute to the hacktivists' cause. Pre-existing beliefs that aligned with the hacktivists' cause were mediated by moral connectivity to the hacktivists and their spokesperson (i.e., Moral altruism and Moral social connectivity mediated the relationship between pre-existing beliefs and willingness to donate to the hacktivists' cause). However, moral connectedness to the supportive social media commentator (Moral behavioral intention) did not mediate the relationship between pre-existing beliefs and the willingness to donate. The model explained 41% of the variance of willingness to donate to a crowdfunding campaign to support the hacktivists. The results from Study 2 suggest that regular suppression use was significantly associated with more negative and less positive affect. However, the experimental manipulation was not successful and did not lead to the hypothesized interaction effects between suppression and expression on the number of intrusive thoughts and affect changes (i.e., there were no significant group differences). The findings from Study 3 showed that scoring higher on the dark personality traits predicted more bystander support for varying forms of SSE. Contradictory to the hypothesis, suppression was not a significant predictor for most forms of SSE. Higher scores on some of the dark personality traits (Machiavellianism, psychopathy, and sadism but not narcissism nor right-wing authoritarianism) were associated with higher everyday suppression use. The explained variances ranged from approximately 7% to 20% depending on the form of SSE. In Study 4, a proclivity for extreme cognitions (i.e., conspiracy mentality) was significantly predicted by higher suppression use, collective narcissism, right-wing authoritarianism (authority/order), and critical thinking (engagement) scores. However, scores on the Dark Tetrad traits, right-wing authoritarianism (morality), and sense of self were non-significant predictors. The model explained 20% of the variance in proclivity for extreme cognitions.

Conclusion: These four studies taken together provide evidence in support of the suppression-incongruence model of extremism. In Study 1, moral connectedness to different actors in the hacktivism vignette influenced bystander support for the hacktivists' cause. As moral

connectedness for the hacktivists and their spokesperson mediated the relationship between pre-existing beliefs on environmental pollution and the willingness to donate, participants could be engaging in moral suppression. The moral suppression could indicate participants were suppressing morality to stay congruent with their pre-existing beliefs to the detriment of objective morality (i.e., hacking is amoral), resulting in a prediction of more bystander support for the extreme behavior. This suppression-to-congruence facet had not been anticipated. Compared to previous research, the higher ecologically valid design investigating how hacktivism works in the real world provides insight into facets that predict bystander support for this form of extremism. For Study 2, there was further support found for the suppression-incongruence model with suppression being associated with more negative affect. This association may indicate a “bottling” up of emotions that could result in a stronger release of them subsequently. As this was one of the first studies in this area to be conducted online, there were many lessons learned on how better to implement this experimental design in future studies. Study 3’s results highlight that triggering of a dispositional trait may elicit bystander support for extremist behavior. The results of this study suggest that once triggered, the proclivity for antisociality and sensitivity to incongruence could become important in predicting more bystander support for SSE, thus providing support for the suppression-incongruence model. The results from Study 4 suggest that a trigger may also be important in cognitive rigidity predicting a proclivity for extreme cognitions. Suppression was a significant predictor for the proclivity for extreme cognitions, and this adds further support to the suppression-incongruence model that suppression can predict more extremism. With higher critical thinking (engagement) predicting more proclivity for extreme cognitions, this could indicate that participants may be suppressing (or not utilizing) their critical thinking in order to maintain their pre-existing beliefs that align with the extreme cognition measure. This could be similar to Study 1’s findings where there is a suppression-congruence facet to more extremism.

Implications and Future Research: From a theoretical perspective, the suppression-incongruence model of extremism is supported, in part, by the empirical research of this thesis. From Study 1, based on the findings, moral connectedness to extremist actors may be a factor that impacts moral suppression and disengagement, which allows individuals to suspend their ethical standards, leading to more (support of) extremist behavior. This could be investigated in future research to get a better understanding of how different facets of moral connectedness

influence suppressing one's moral compass to show susceptibility to radicalization and extremism. In Study 3, scoring higher on some of the dark personality traits (Machiavellianism, psychopathy, and sadism) was associated with an increased use of suppression. This had been theorized but not previously explored in research, and these results may have implications for interventions that can be explored further. The suppression-incongruence model and findings from this thesis add to the evidence base that could assist in developing community-based interventions to take a pre-emptive approach to minimizing susceptibility to extremism. Future research should investigate the causality of the suppression-incongruence model to investigate which facets influence which pathways to radicalization and bystander support for and engagement in extremism.

Keywords: suppression, incongruence, extremism, hacktivism, state-sponsored extremism, conspiracy mentality

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List of Acronyms

CFA	Confirmatory Factor Analysis
CM	Conspiracy Mentality
CMQ	Conspiracy Mentality Questionnaire
CN	Collective Narcissism
CNS	Collective Narcissism Scale
CT	Critical thinking
D4	Dark Tetrad (Machiavellianism, narcissism, psychopathy, sadism)
DV	Dependent variable
EC	External correspondence
EFA	Exploratory Factor Analysis
GAM	General Aggression Model
IC	Internal Correspondence
MSLQ-CT	Motivated Strategies for Learning Questionnaire-Critical Thinking Subscale
NIH	Negative Identity Hypothesis
RWA	Right-wing Authoritarianism
SCT	Social Cognitive Theory
SD3	Short Dark Triad
SEM	Structural Equation Modeling
SENCTDS	Student-Educator Negotiated Critical Thinking Dispositions Scale
SMT	Social Movement Theory
SOSS	Sense of Self Scale
SRWA	Short-version Right-wing Authoritarianism Scale
SSE	State-sponsored Extremism
SSIS	Short Sadistic Impulse Scale
TFBs	Thoughts, feelings, and beliefs
WBSI	White Bear Suppression Inventory

Glossary

Term	Definition
Bottom-up	Citizen-initiated
Congruence	An alignment between two or more aspects of our inner thoughts, feelings, beliefs, emotions, behaviors, and situational forces
Conspiracy mentality	Proclivity of thinking in conspiratorial terms or extreme cognitions *these terms are used interchangeably
Ego depletion	Energy resources are finite, and if those become too taxed or depleted, it becomes challenging for continued suppression to be effective
Extremism (non-violent)	The psychosocial process whereby individuals attain radical views
Extremism (violent)	Individuals increasingly accept violence (e.g., undertake, aid, or abet) as a legitimate action to achieve change
Hacktivism	Portmanteau of hacking and activism. Hacktivism promotes attention to a political cause with no violence, threat of violence, nor self-serving goals
Hacktivism (eco-)	The use of non-violent, cyber actions to promote environmental causes or protections
Incongruence	Misalignment between thoughts, feelings, beliefs, emotions, behaviors, and situational forces with which we are faced
Ironic theory	The act of trying to suppress a thought leads to that very thought to become hyperaccessible, causing the thought to become more frequent and intrusive
Rebound effect (rebounds)	Increases in the actual thought, feeling, belief, emotion, or behavior one is trying to suppress (i.e., the target or intrusive thought)
State-sponsored extremism	A situation where a state officially supports or partakes in violent and/or non-violent actions that attempt to harm (physically or psychologically) another state or its own residents or citizens but outside of formally declared war
Suppression	An active strategy to inhibit one's own thoughts, feelings, beliefs, emotions, and behaviors
Top-down	Government-initiated

Preface

P1. Background

Those who engage in, or support, extremism in society have the potential to be pivotal for either societal growth or part of the process of societal fragmentation. For the latter, there is increasing acceptance that extremism is a multifaceted process. This has included contributions from psychology that have examined topics such as role identity (Haney et al., 1973), obedience to authority (Milgram, 1963), and frustration-aggression (Berkowitz, 1989). Theoretical contributions have also included those by Anderson and Bushman (2002), Beevor (2017), and Bandura (2001). This thesis seeks to contribute to the body of evidence in the area by developing and testing a new, more dynamic model—the suppression-incongruence model—on the different pathways to (support) extremism.

P.2 Extremism and Violent Extremism

One area that continues to plague research within extremism is the lack of consistent and agreed-upon operationalization of terms (Schmid & Jongman, 1988; McCormack, 2003; Borum, 2011). This lack of operationalization makes it challenging to interpret others' theories, conceptualize the varying concepts, and compare and synthesize results due to different measures being used. This thesis distinguishes between non-violent extremism and violent extremism and highlights that extremism has both behavioral and non-behavioral (e.g., cognitive) components. In line with the focus on psychosocial processes, non-violent extremism is defined here as the psychosocial process whereby individuals attain radical views. Violent extremism includes both radical views but also an increasing acceptance of the legitimacy of violence to achieve change (Bartlett & Miller, 2012; Sarma, 2017). This definition highlights that an individual can be radicalized, but this is not necessarily an indication that they will commit to or engage in violent extremist behavior. While non-violent extremism is a sign of healthy society because it can lead to societal growth, violent extremism leads to pain and suffering (Sarma, 2017).

This thesis investigates bystander support for violent and non-violent extremist behavior and increased proclivity for extreme cognitions. The three specific forms of extremism that were examined in this thesis are eco-hacktivism (Studies 1 and 2; Chapters 5 and 6, respectively), state-sponsored extremism (Study 3; Chapter 7), and proclivity for extreme cognitions (Study 4; Chapter 8). Hacktivism is a portmanteau of hacking and activism. Hacktivism promotes attention

to a political cause with no violence, threat of violence, nor self-serving goals (Denning, 2001, Eagan, 1996, PytlikZillig et al., 2015). Eco-hackivism then is the use of non-violent, cyber actions to promote environmental causes or protections (inspired by Eagan, 1996). State-sponsored extremism has no agreed upon definition in the extant literature. It is operationalized here as a situation where a state officially supports or partakes in violent and/or non-violent actions that attempt to harm (physically or psychologically) another state or its own residents or citizens but outside of formally declared war. Lastly, conspiracy mentality, is the proclivity of thinking in conspiratorial terms or extreme cognitions.

P.3 Theoretical Contribution

The program of research set out in this thesis is informed by a novel model developed from the integration of existent theories on suppression and incongruence, as well as emerging research on the role of individual differences in influencing the propensity to radicalization and extremism. The model is set out in detail in Chapter 2.

There are two main theories, ironic theory (Wegner, 1994) and ego depletion (Baumeister et al., 1998), which explain why rebounds occur. Regardless of why rebounds happen, they have consequences in terms of aggression and violence. Rebound effects result in individuals being less “flexible,” and as such, they are more likely then to choose aggressive solutions rather than prosocial ones (Robertson et al., 2012). This thesis suggests that individuals experiencing rebound effects due to suppression may also experience incongruent states, leading to a second facet of the proposed model that informs the work set out in this thesis.

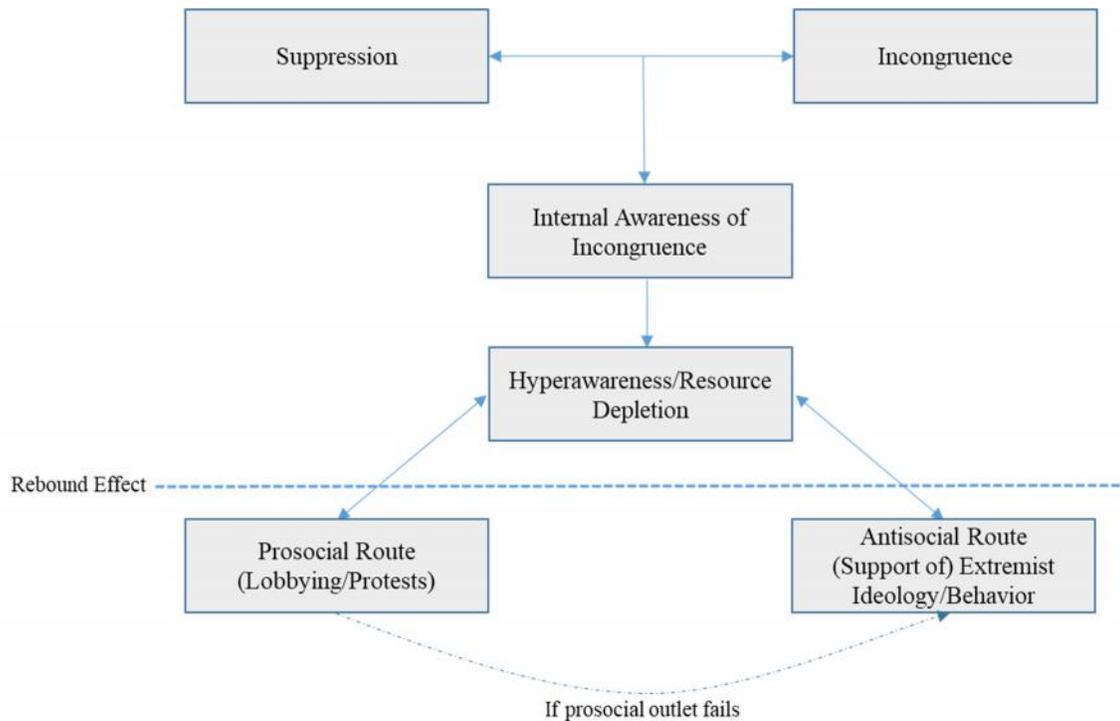
To investigate incongruence, an experiment on incongruence/congruence is the Stroop test where participants were asked to say the color of the word, not what the word says (Jensen & Rohwer, 1966). For example, a participant would see **blue**, but they should say red (incongruent) versus **blue** where they should say blue (congruent). Some research has found that the Stroop test shows cognitive biases in processing incongruent stimuli (Williams et al., 1996). This could indicate that it may be more challenging to process and integrate incongruent information (Frank et al., 2018), suggesting individuals may become more inflexible if they are in an incongruent state. For example, one study found that in an incongruent state participants’ self-control was negatively associated with prosocial attitudes (Schmidt-Barad & Uziel, 2020). This research raises the possibility that incongruence may be an important factor in self-regulation and may play a role in extremism.

This thesis integrated both suppression and incongruence in a model of extremism, expanding upon existing theories discussed in detail later in this thesis (see Chapter 1). The concepts of suppression and incongruence are central to the proposed model. In the model (see Figure P.1), suppression and incongruence are bidirectional, meaning suppression can lead to incongruence and incongruence can lead to suppression. Then, an internal awareness of this incongruence occurs, which cannot be maintained indefinitely. Due to this, either a hyperawareness of this state occurs or one's internal resources to maintain this incongruent state become depleted, leading to rebound effects. When one is experiencing rebound effects, something needs to be done to "release" them. Thus, rebounds can motivate the individual to engage in prosocial activities, or the rebounds can motivate them to support or engage in more (ideological or behavioral) extremism. For someone who initially chooses a prosocial outlet while experiencing rebound effects, if their efforts are not successful, they then could be motivated to support or engage in more extreme ideologies or behaviors. This is the crux of my model.

Two additional individual differences that may influence the pathways of my model are proclivity for antisociality and sensitivity to incongruence. These individual differences could not only impact the route an individual may choose but also the speed with which they choose it. For instance, proclivity for antisociality could be found with those being higher on a so-called dark personality, leading to more (bystander support for) extremism, according to the model. Cognitive rigidity, such as lower critical thinking and weaker sense of self, could enhance one's sensitivity to incongruence, leading to more (bystander support for) extremism, according to the model. The suppression-incongruence model has more plasticity in that it allows for cognitive, dispositional, and behavioral interplay that explicate individualized routes to (bystander support for) extremism. This model along with a more in depth look at the theories that shaped it are explained in Chapter 2.

Figure P.1

Suppression-Incongruence Model of Extremism



P.4 Aim and Objectives

The overall aim of this thesis is to test different aspects of the suppression-incongruence model (Chapter 2). This involves investigating varying forms of suppression and (in)congruence as dynamic processes that may influence bystander support for different forms of violent and non-violent extremism. The overarching objective from a theoretical perspective is to develop a more holistic, dynamic model of extremism that expands on and incorporates other models. This suppression-incongruence model is more pre-emptive and attempts to explain a new way of viewing the extremism process.

P.5 Overview of the Empirical Studies

For the empirical studies, the main objective is to examine different forms of extremism (hacktivism in Studies 1 and 2, state-sponsored extremism [SSE] in Study 3, and extreme cognitions in Study 4) and facets that influences one's susceptibility or resilience to supporting these forms of extremism as informed by the proposed suppression-incongruence model. More detailed explanations about each study can be found in Chapters 3 and 4 as well as within each of the empirical studies in Chapters 5 – 8.

Study 1 tests my model by investigating how moral connectedness to extremist actors may predict a more willingness to support extreme behavior (i.e., hacktivism). This study is an online cross-sectional study. It investigates different facets of morality, and how these facets predict moral connectedness to three actors in an eco-hacktivism vignette. The three actors are: the hacktivists themselves, their spokesperson, and a supportive social media commentator. Participants' pre-existing beliefs on the importance of clean water are measured to assess their influence both on moral connectedness to the three actors and the willingness to donate to support the hacktivists' cause, which is the main dependent variable.

Study 2 tests my model by examining if those in an incongruent state experience more rebound effects compared to those in a congruent state or in the control condition. This study is an online experiment where participants are randomly assigned to one of three conditions: suppression, expression, or control. In the suppression condition, participants are asked to suppress their TFBs about the same eco-hacktivism article in Study 1. The expression condition asks participants to write out their TFBs about the article while the control condition has no instructions either way. After reading the article, participants are asked to do an unrelated task (word search) to allow enough time for them to count the number of times they thought about the article. This is the objective rebound measure. For a subjective rebound measure, participants are asked to indicate their positive and negative affect (pre and post). The pre-measure is done before reading the article, and the post is at the end of the experiment after the word search. This study investigates both suppression and (in)congruence. Those who are asked to suppress their TFBs are theorized to be in an incongruent state while those who are asked to express their TFBs are theorized to be in a congruent state.

Study 3 tests my model by investigating how individual differences (those higher on the dark personalities) with a proclivity for antisociality that are theorized to use suppression indicate more sympathies towards state-sponsored extremism (SSE). This study is an online cross-sectional study examining different forms of real-world SSE. The four forms of SSE are: violent SSE, intergovernmental agreements that financially support SSE, non-violent SSE, and political policies that could instigate SSE. In addition to attitudinal beliefs on SSE, individual differences on the dark personalities and suppression are measured to investigate their influence on sympathies towards SSE.

Study 4 is an online cross-sectional study that investigates how cognitive rigidity predicts a susceptibility to a proclivity for extreme cognitions. Individual differences on the dark personalities, suppression, critical thinking, and sense of self are measured to investigate if they are protective against or risk factors towards extreme cognitions. Those higher on the dark personalities tend to display cognitive rigidity with more dogmatic patterns of thoughts and behaviors. This rigidity is theorized to increase one's sensitivity to incongruence, predicting more proclivity for extreme cognitions. Conversely then, cognitive flexibility allows individuals to adapt or adjust to new information even if it is of an opposing viewpoint, decreasing sensitivity to incongruence, which in turn predicts less extreme cognitions. This is how my model is being tested in this study.

P.6 Thesis Overview

The chapters that follow present an introduction to theory and research that has informed the thesis before reporting on the suite of novel studies that formed the empirical components of the thesis. Chapter 1 presents a synthesis of existing knowledge in the area. Chapter 2 discusses the real-world and theoretical etiology that shaped the research in this thesis and introduces the new suppression-incongruence model of extremism. Chapter 3 presents an introduction to the empirical studies, their aims, research questions, and how they test different aspects of the suppression-incongruence model. Following this, Chapter 4 discusses the methodological overview, brief rationale, research aims, protocols, and power analysis for the empirical studies (Chapters 5 through 8). Chapter 5 discusses a quantitative cross-sectional study that examines participants' willingness to contribute to a crowdfunding campaign for eco-hacktivism through moral perceptions of different actors in the vignette. Chapter 6 presents a true experiment examining how participants respond to being asked to suppress or express (or not) their TFBs on the same eco-hacktivism article from Chapter 5. Chapter 7 examines dispositional traits that have theoretical tendencies to suppress and if this could predict more bystander support for four real-world examples of SSE in a cross-sectional study. Chapter 8, the final empirical study, discusses a cross-sectional study on traits and dispositional traits that could predict or protect against a proclivity for more extreme cognitive ideology. In Chapter 9, the final chapter of the thesis, the findings and implications, limitations, and potential future research based on the findings of this thesis are discussed.

Chapter 1

1.0 Psychology of Extremism

“Explaining is not excusing; understanding is not forgiving.”

Christopher Browning (1998), p. xviii

1.1 Introduction

If we look around the world at the moment, there seems to be an abundance of violent extremist acts, such as bombings at concerts, riots, protesting public health measures, violent opposition towards anti-racism marches, and governmental policies that negatively target groups within their society. These events often draw strong media attention, and these extremist actions seem to be growing in number, frequency, and participation. However, looking at the perpetrators of the extremism, we develop a hindsight bias whereby it is declared that perpetrators' actions could have been predicted by all the red flags of their past. While there have been several qualitative studies conducted with perpetrators and/or their families, very little research has been done quantitatively by those who support but are not directly involved in the extremist acts. I aim to close this gap with the current work.

Determining how and why people radicalize, and subsequently act violently, is essential in understanding and responding to extremism. According to Kemmesies (2016), the average time from radicalization to active engagement is 20 months, suggesting that, for some individuals at least, the process of violent extremism is protracted. Schmid (2016) has argued that we should be increasingly focusing on the earliest stages of this process and that current efforts to prevent violent extremism are occurring too late when individuals have become entrenched in, and committed to, their involvement in extremism. Schmid postulated that extremism prevention could follow preventative measures, similar to the healthcare profession (with more attention at the primary level) by engaging in pre-emptive attempts to prevent extremism by decreasing the chance of the creation of a terrorist organization, rather than simply mitigating damage closer to the act. This raises the question of how to circumvent the incremental steps that lead to subtle changes in perceptions, attitudes, cognitions, and behaviors towards joining an extremist organization before full radicalization happens. Based on this, I have developed a new model called the suppression-incongruence model of extremism that incorporates and expands on extant literature and research. I argue my model allows for the extremism process to be examined at

earlier stages to add to the limited evidence base and allow community interventions to be informed by this research. It is crucial to note that the earlier stages in extremism are focusing on those who may directly endorse or passively support varying forms of extremism (i.e., bystanders), not the perpetrators.

Attempts to explain the process of violent extremism have drawn on contributions from all disciplines within the social sciences, including political science, criminology, sociology, and psychology. From a psychological perspective, contributions reviewed in this Chapter and thesis range from social cognitive theory, emotion regulation, to coercive radicalization. Yet contributions from psychology have, by and large, offered neither the same level of complexity nor explanatory power that is exemplified in other research areas. Ultimately, I aim to present an integrated theory of violent extremism that includes cognitive, dispositional, and behavioral factors that interplay to create multiple, individualized routes to extremism to move the theory from explanatory to explicit.

According to the Global Terrorism Index, there were over 60,000 attacks worldwide by violent extremist individuals and groups between 2007 and 2021 with Sub-Saharan Africa accounting for nearly half of these incidents (IEP, 2022). Attacks are increasing in frequency, up 17% in 2021 compared to 2020, and with a 320% increase in attacks by far-right extremist groups from 2014 to 2019 alone (IEP, 2020). While increasingly common, violent extremism is also exceedingly complex and characterized by heterogeneity in motivation, methods, and actors (e.g., group vs. individual). It is also typically preceded by a non-violent process of radicalization (i.e., where an individual may hold extreme beliefs, but without accompanying behavior). Against this backdrop, there has been growing interest in understanding the psychological processes that may explain extremist thinking and behavior. This thesis focuses on bystander support or sympathies towards violent, non-violent, and cognitive extremism. Bystander support can be active (e.g., donating money to an extremist cause) or passive (e.g., not opposing or supporting the idea of an extremist cause). This thesis seeks to contribute to knowledge in the field, focusing on sympathies towards non-violent and violent extremism.

Extremism in and of itself encompasses many attitudes and behavioral acts, making it a large and complex area. Lack of agreed-upon operationalizations in the field of extremism can create a challenge to empirical investigations on extremism. For instance, extremism can be defined and investigated as a willingness to sacrifice oneself for an ingroup member (Zmigrod et

al., 2019), a willingness to damage belongings from another religion (Chabrol et al., 2020), sympathies for violent protests (Bhui et al., 2016), a willingness to torture (Lindén et al., 2016), and a “deviancy from a general pattern of behavior or attitude” (Webber et al., 2017, p. 273) to name a few. Sotlar (2004) summed the crux of the issue with defining extremism, “one can agree that [a] definition of extremism is similar to that of pornography - you cannot define it, but when you see it, you recognize it easily” (p. 2). The lack of one definition for extremism highlights the complexity of this large field of research, but it also shows that the extant literature and research each assign their own definitions, making it challenging to compare findings within and between contexts. In an attempt to minimize confusion over the concepts and how I have applied them within the thesis, a glossary of the key terminology is provided (page xxv) as well as operationalizing my terms throughout each of the chapters.

1.2 Theories on Extremism

This section presents a brief summary of the theories that are relevant to, or resonate with, the suppression-incongruence model (see Table 1.1). This is not an exhaustive review, but these theories are representative of the ideological perspectives that consider individual- and group/societal-level variables. Radicalization and extremism are areas that require a multidisciplinary approach in terms of understanding personal and external influences that lead to involvement in radical/extreme groups. While these theories offer different interpretations and explanations of how individuals become radicalized or extreme, the theories should be viewed as complementary, rather than contradictory, with each contributing an additional piece to this multi-faceted process. I will first present an overview of each model then by using the “theory knitting approach” (De Pelecijn et al., 2021) will highlight overlaps through common themes between the theories before discussing the gaps. It is important to note that the aim of this thesis was to develop a new model from aspects that had not been previously examined in extremism research. Thus, how the suppression-incongruence model expands on and creates a new lens to view the pathways to (supporting) extremism is then discussed in detail in Chapter 2.

1.2.1 Emotion Regulation and General Aggression Model

While everyday aggression and violent radicalization/extremism are inherently different, some aggression models, especially General Aggression Model (GAM), could provide valuable insight into aggressive/violent behavior. GAM is an integrative framework of smaller aggression theories to better encompass aggression more holistically, allowing for multiple motives to

aggressive behavior with dynamic pathways (Anderson & Bushman, 2002; Robertson, et al., 2012). The motives GAM incorporates are personal (e.g., beliefs), situational (e.g., presence of a weapon), cognitive (e.g., accessibility of aggressive thoughts), affective (e.g., emotional states that illicit aggression), and arousal routes (e.g., interpreting arousal as anger or arousal moderating anger). These then combine and have interplay to evaluate the likelihood of aggression.

Even though aggression can result from both emotional under- and over-regulation, the focus is on over-regulation for this thesis. Emotional over-regulation can occur through emotional avoidance—escaping from or avoiding the situation which causes distressing emotions—or emotional suppression (Robertson et al., 2012). There are behavioral and cognitive strategies people employ to over-regulate their emotions (e.g., avoiding certain people or focusing on selective aspects of a situation; Robertson et al., 2012; Gross, 2002). Eventually, over-regulation, according to GAM, becomes too taxing and creates an uncomfortable internal state that needs to be alleviated. Over-regulation leads to, for example, a decrease in positive but not negative emotional affect (Gratz & Roemer, 2004; Gross, 2002), a depletion in decision making skills (Richards & Gross, 2006), and a reduction in elaborate information processing (Vohs et al., 2012). Having sufficient time and resources to process information are key components in preventing aggression that can influence both non-violent and violent radicalization and extremism (Taylor, 2009). While this model allows for interplay between many factors on the route to extremism, it is also possible predispositions and traits can influence how individuals react differently in various situations.

1.2.2 Social Cognitive Theory

Social cognitive theory (SCT) hypothesizes how individuals create cognitive maps based on behavior, environment, dispositions, and cognitions, and the bidirectional influence each has on the others (Bandura, 2001; Borum, 2011). Our expectations, beliefs, and dispositions are created and activated through modelling, persuasion, and/or observation, forming our cognitive maps that create a subjective perception of the external cues we encounter (Bandura, 1986; Borum, 2004). Thus, our cognitive maps influence our behavior, our behavior alters our environment, and then our behavior is again altered by the new environment, meaning people both produce and are produced by the environment they encounter and interact with. What this means is if a person has the propensity to be aggressive, they will (1) be more prone to hone in

on aggressive cues in the environment and (2) be less able to produce non-aggressive solutions to the situations they encounter. SCT highlights how cognitive, environmental, and personal factors combine, align, and have interplay to shape our behavior. Applying SCT to the radicalization process, for example, if someone were to feel discriminated against, they would be more likely to interpret encounters as discriminatory, feeding into their belief that they are not treated equally in society and see no other avenue than to radicalize to “correct” the discrimination.

1.2.3 Negative Identity Hypothesis

Negative identity hypothesis (NIH) rose from Erikson’s (1982) theory of identity development, which explored how situational cues (crises) become internalized and develop into personality traits (for a more detailed analysis through all the stages of development, see Abbasi et al., 2018). Erikson proposed that throughout life people encounter crises—emotional upsets, emergencies, and opportunities—which can become positive, prosocial personality traits when the crisis(es) is(are) handled adaptively or develop into psychopathologies when the crisis(es) is(are) handled maladaptively (Abbasi et al., 2018; Erikson, 1982). In terms of radicalization or extremism, this theory stipulates that being between the ages of 12-20 would be the most crucial time when a person develops extremist/moderate leanings. The extremist leanings occur, according to NIH, when individuals are not able to cope with the discrepancies between ideologies the family wants the individual to accept and the societal pressure to choose the cultural ideologies. By not successfully navigating this crisis, people will become isolated, leading to feelings of anger and helplessness that manifest into frustration and aggression that then results in violent radicalization/extremism (Abbasi et al., 2018). NIH explicates how external events and cues can be internalized and influence cognition and how incongruence between external cues creates turmoil, both of which in turn influence adaptive or maladaptive behavior.

1.2.4 Coercive Radicalization

Coercive radicalization occurs in stages, incorporating daily religious behavioral rules given by a charismatic authority and apocalyptic or millenarian indoctrination to slowly convert their captives for the benefit of the group (usually toward violent radicalization and self-sacrifice, Beevor, 2017). Coercive radicalization is, ultimately, a conscious tactic to make abductees develop complete dependency for survival and highly regulated routines but with the addition of spiritual protection to feel a sense of group membership. As Beevor rightly pointed out, it is

challenging to ascertain if coercive radicalization is a result of having to survive and a coping mechanism or actual ideological uptake. Regardless, coercive radicalization highlights how external cues can be internalized through interplay to become inner beliefs that then produce a specific behavior that is congruent with the indoctrination. A real-world example of this pathway may be the indoctrination process implemented by the Lord's Resistance Army, where they kidnapped people and heavily controlled their daily routines, including indoctrination/religious rituals, to convert them and then get them to participate in extremist acts for their cause (Beevor, 2017).

1.2.5 General Strain Theory

General strain theory (GST) stipulates that those who experience a number of stressors (strains), ranging from financial to aspirational limitations, are more likely to engage in criminal activity (Agnew, 2010). Strains can be real or perceived, but it is the negative perception that, according to GST, leads to action. It is not an experience of one strain but a collection of strains that instigates pressure or incentive to cope with negative emotions, which create the motivation to alleviate them often through aggression and violent radicalization (Agnew, 2010; Froggio & Agnew, 2007). Thus, to reduce terrorism according to GST, there needs to be a multifaceted approach of decreasing or altering the strains while simultaneously attempting to limit the nature and reason of the strain as well as the relationship the strained has with the source. GST theorizes how external cues culminate to create an incongruence with a previous inner emotional state, resulting in a drastic change when the strains (i.e., incongruence) can no longer be tolerated.

1.2.6 Social Movement Theory

Social movement theory (SMT) focuses on group-level variables (e.g., group dynamics and interactions) and argues that radicalization revolves around who you know and socialize with (e.g., family members, friends, acquaintances)—a horizontal, rather than top-down, recruitment pattern (Beck, 2008; Wiktorowicz, 2004; Dalgaard-Nielsen, 2010). At its core, SMT states radicalization results from social processes—through a number of steps—by engaging with and participating in radical groups where there is a gradual acceptance of the group's beliefs (Dalgaard-Nielssen, 2010). Therefore, radicalization can only be successful with the extent to which the radical group can portray a certain reality that is subsequently adapted and internalized as “truth” by its members (Neumann & Rogers, 2007; Dalgaard-Nielsen, 2010; Wiktorowicz, 2004). SMT theory postulates how people become exposed and aware of radicalized

groups/ideology and how who people come into contact with influences their access to such groups/ideology (i.e., persistent exposure leads to internalization).

1.2.7 Network Theory

This model explicates how cognitive factors, such as moral outrage, interplay with situational factors (Sageman, 2008). Moral outrage originates from viewing moral violations in events. Personal experiences of moral violations, such as discrimination, is the final factor. The situational factor in this model focusses on mobilizing through networks, be they in person or virtual, to create social bonds with like-minded individuals. Therefore, radicalization results from a personal crisis to one's identity by external cues with a group of those who share the same ideology. Network theory, like SCT, emphasizes the interplay between external cues and how they are internalized to shape beliefs/cognitions. Unlike SCT, network theory assumes the external cues force/create the motivation to facilitate changes in cognition. Although there is interplay, network theory focuses more on how the interplay is created by new external cues, and these external cues change cognitive beliefs to become more extreme.

1.2.8 French Sociological Perspective

The French sociological perspective investigates radicalization in terms of community- and societal-level variables, such as globalization's impact on identity and a sense of community. While there are differences within this perspective, the focus here is on their overall similarities. The perspectives highlight people's radicalization is not simply a retaliatory reaction to deprivation or repression but rather an attempt for individuals to re-establish or regain a lost cultural identity (Kepel, 2004; Khosrokhavar, 2006; Roy, 2017). A cultural identity can be lost by, for example, living in a culture different from one's parents, thereby no longer feeling connected to one's parents' birth countries while simultaneously being excluded from their "own" culture. This instigates a sense of having no culture, which can be alleviated by joining radical groups. Therefore, radicalization is perceived as a cultural failure rather than any failures or weaknesses on a personal level. The French sociological perspective and NIH are quite similar in their approaches towards radicalization—a stressor or crisis is caused by external cues that differ from their parents or culture in which they were raised. Thus, like NIH, the French sociological perspective does not focus on internal motivation to radicalize.

1.2.9 Role Identity Theory

This theory stipulates how a person identifies with a role will determine their behavior. Thus, if an individual identifies with a role that allows for aggression or extremist behavior to be exhibited (e.g., gang member or fighter), they will engage in the behavior that is associated with that role (Haney et al., 1973). Role identity theory highlights how the power of the situation can influence how a person will behave in alignment with how they perceive they should act in a “role.” For instance, if a person becomes a gang member, they may begin to behave more anti-socially, such as armed altercations, as they perceive the role dictates. Role identity theory was examined in the Stanford prison experiment. In the Stanford prison experiment, where participants were assigned to be prison guards or prisoners. Haney and colleagues surmised it was the participant guards’ identification to the role of “guard” that elicited their behavior to break prisoner solidarity, resulting in the extremist behavior, such as physical and psychological aggression. The methodological concerns with this experiment, in particular the role the experimenters played in giving directions to the participant guards, raises questions if role identity of being a guard in power would have been sufficient in and of itself or if it were obedience to authority (discussed next) to elicit the extreme behavior (Le Texier, 2019).

1.2.10 Obedience to Authority

Through a series of experiments, Milgram (1963) set out to investigate if participants would blindly follow orders of a perceived authority. Obedience to authority stipulates that a top-down pressure from a perceived authority elicits extreme behavior if the authority dictates such behavior. As with role identity theory, there are methodological and ethical concerns in the way in which this theory was examined that are beyond the scope of this thesis (see McArthur, 2009 for a review). Briefly, the participants had to shock in increasing increments a confederate learner when the learner failed at learning the correct pairs (e.g., grass, green). The experimenter wearing a white laboratory coat verbally prodded the participants if they attempted to stop shocking even when the learner screamed or stopped responding. Milgram discovered that participants overall were obedient to authority despite demonstrating psychological distress and would shock to the maximum based on the authority (i.e., experimenter in a laboratory coat). However, obedience to authority or orders varied greatly depending on other situational factors, such as proximity to both the authority and the person being aggressed against. For instance, the closer the authority was to the participant, the stronger the adherence to the orders. Additionally, the closer the participant had to be to the learner (e.g., victim), the less adherence there was to

the authority. These findings indicate that individuals will be obedient to an authority and engage in extremist behavior. Much like role identity, obedience to authority does not account for internal motivations or dispositional factors in extremist behavior but focuses on external factors (i.e., being given orders) to elicit extremist behavior. An example of this in the Milgram (1963) studies was found that without the verbal prodding by the authority to continue shocking the learner, a few participants still shocked to the maximum. This suggests that there were individual differences that may have motivated those participants' to shock to the limit.

1.2.11 Frustration-Aggression Hypothesis/Drive Theory

The frustration-aggression hypothesis has a long history in psychological research, as it was first proposed in 1939 by Dollard and colleagues. The crux of the hypothesis is when individuals feel frustrated and this frustration cannot be alleviated, it leads to an expression of aggression. Berkowitz (1989) then expanded and discussed the boundaries of the frustration-aggression hypothesis. Berkowitz continued that emotional and expressive aggression tend to result from frustration *if* the frustration is experienced as a negative affect; however, instrumental (i.e., goal oriented) aggression does not. Another aspect that is often linked to aggression is frustration from not being able to achieve one's goals. However, he stipulated that aggression results from frustration of not being able to achieve goals that individuals feel could have or should have been attainable. As others have pointed out with the frustration-aggression hypothesis, there are many reactions to frustration, and aggression may be just one reaction to not being able to achieve one's goals (Eron, 1994). Other researchers have attempted to clarify that it is only individuals who identify or label themselves as frustrated and angry who will then engage in aggression, suggesting without this labelling, no aggressive responses would be displayed (Tedeschi & Felson, 1994). A limitation of this hypothesis, and the variations of it, is it is unidimensional, meaning there are many avenues one can take when frustrated as mentioned previously, and there is no guarantee that the aggression relieves or rectifies the frustration. If the aggression were a result of frustration, the aggression would be the release of the frustration, and this is not necessarily the case.

Table 1.1

Extant Theory Summary

Theory	Main Aspects	Limitation
Emotional regulation/General aggression model	Over- and under-regulation of emotions leads to aggressive behavior	Only looks at how suppression of emotions and behavior leads to maladaptive/negative effects and

(Anderson & Bushman, 2002; Robertson et al., 2012)		neglects predispositions influencing decisions or being suppressed
Social cognitive theory (Bandura, 2001)	Cognitive maps are formed through interplay between TFBs and observations. Aggression is due to perceiving more aggressive cues and less ability to respond non-aggressively	Minimizes emotional and dispositional responses and relies heavily on observational influences
Negative identity hypothesis (Knutson, 1981; Abbasi et al., 2018)	Crises lead to either extremist/moderate beliefs, which shapes a person's personality between 12-20 years old	Focuses on development that becomes a permanent disposition/mindset rather than a process that is continually in flux
Coercive radicalization (Beevor, 2017)	Extreme control over daily routine leads to indoctrination uptake	Focuses only on external influences altering the authentic self
General strain theory (Agnew, 2010)	Experiencing a collection of strains creates negative emotions that are alleviated through extremist behavior	Focuses exclusively on how the external influences create the turmoil to be alleviated
Social movement theory (Beck, 2008)	Group dynamics of who you know and associate leading to accepting extremist groups' indoctrination in small incremental steps	Neglects individual differences and initial dispositions that may lead to self-selecting to extremist groups/acquaintances
Network theory (Sageman, 2004)	Interplay between cognitive factors (moral outrage) and situational influences that lead to seeking out groups with like-minded extremist views	Focuses only on how external factors lead to a change in cognition
French sociological perspective (Kepel, 2004; Khosrokhavar, 2005; Roy, 2017)	Extremism is a result of trying to regain a lost culture thereby joining extremist groups in order to recapture the lost culture	Neglects individual differences and dispositions while focusing only on external group-level variables
Role identity – interpersonal dynamics (Stanford Prison Experiment; Haney et al., 1973)	Individuals conform to the expected roles they are given, and external influences are sufficient to promote aggressive behavior	The individual differences within the group demonstrate that not everyone conforms to roles and external influences are not the only factor that influences extreme behavior
Obedience to authority (Milgram, 1963)	Individuals will obey extreme orders when they are given by someone who is perceived as an authority	Focuses solely on external influences and neglects individual differences or dispositional motivations
Frustration-aggression hypothesis (Dollard et al., 1939; Berkowitz, 1989)	Frustration of not being able to achieve a goal or target leads to aggressive behavior to dissipate the frustration	There are numerous responses to frustration and engaging in aggression does not necessarily reduce the level of frustration and aggression can occur without frustration

1.3 “Knitting” of Extant Theories: Common Themes and Overlaps

The theories that are presented here are an overview of the many angles in which extremism has been viewed. Looking across all of these theories, there are five themes that emerge for the pathways to extremism. These are experiencing negative emotions, internalizing external/situational cues, cognition, group dynamics, and rigidity that lead individuals to engage in extremism (See Table 1.2 for a summary). The questions that remain and the gaps in the theories as well as the research are discussed in Section 1.4.

1.3.1 Experiencing Negative Emotions

Experiencing negative emotions is seen in several of the theories though each theory attributes different negative emotions leading to more extremism. In GAM, the model focuses on how over-regulating (i.e., suppressing) negative emotions and behavior leads to a rebound effect that will eventually result in more extreme behavior. Experiencing negative emotions leading to more extremism is also relevant in SCT, NIH, GST, network theory, the French sociological perspective, and frustration-aggression hypothesis. NIH and general strain are similar in that the negative emotions are explained as crises or strains. However, NIH stipulates that the negative emotions (i.e., crises) create an extremist mindset; whereas, GST states these negative emotions create a motivation to “release” them, resulting in seeking out ways to express more extreme behavior. Like, GST, the frustration-aggression hypothesis attempts to explain more extremist behavior from frustration (e.g., not being able to achieve one’s goals) resulting in finding outlets to “release” them, producing more extreme behavior. In the French sociological perspective, the negative emotions that are experienced are a loss of culture, and the attempt to regain that lost culture leads to seeking out extreme groups. GAM is the only extant theory that includes a suppression component. While the other theories focus more on an under-regulation (i.e., a lack of control) of negative emotions leading to more extremism, GAM suggests that it could be both under- and over-regulation of negative emotions that lead to more extremism. In this model, over-regulation overtime will lead to more extremism once the overexertion cannot be maintained, resulting in a release of the bottled up negative emotions. Unlike all the other theories in this section, SCT posits a different perspective on experiencing negative emotions whereby experiencing negative emotions (whether internally or externally motivated) creates a hyperawareness of these emotions. This hyperawareness then leads to an individual perceiving more negative emotions around them and then reacting in kind/deemed necessary. These

theories, albeit in different ways, focus on how external factors produce negative emotions that an individual then needs to react to in some way, which in turn leads to more extremism in order to “release” the negative effects of the emotions. Thus, experiencing negative emotions is a common and overlapping theme among many of the extant extremism theories.

1.3.2 Internalizing External Cues

The second theme from the knitting analysis is extreme external and situational cues being internalized. What is meant by internalizing external cues is an individual either has become to “believe” that extremism is necessary to achieve change by witnessing the situation cues around them or the power of the situation creates a shift towards extremism (e.g., engaging in excessive violence because others around are). This theme is found in several theories: SCT, coercive radicalization, SMT, network theory, and obedience to authority. Each theory does suggest different external or situational cues are more influential on the pathways to extremism. SCT focuses on a hyperawareness to perceive extreme behavior and respond in kind. For instance, if an individual felt they were angry and wanted to fight, they would then notice more (whether perceived or real) situations to release their anger/fighting. This hyperawareness then creates a feedback loop through internalization (i.e., they feel angry and want to fight, so they find situations to express their anger/fight, which in turn could validate their feelings of anger/fighting). Coercive radicalization focuses on extreme dictatorial control over daily routines that intentionally lead to indoctrination. The individual, according to this theory, internalizes the indoctrination and behaves accordingly. Thus, if the indoctrination is promoting extremism as a justified means of action, the individual subjected to coercive radicalization will adopt this as their beliefs. SMT and network theory have similar focuses where being around others who engage in extremism allows for slower adoption of those beliefs. The internalizing of the external cues in both of those theories depends on the group around them. If the group one associates with begins to develop more extreme ideology, all members that associate with that group will accept the more extreme viewpoint according to these theories. While external and situational cues have been theorized to lead to more extremist behavior, other theories emphasize that it is the power of the situation that creates the shift towards extremism, and these external cues are internalized to result in extreme behavior, such as obedience to authority. Obedience to authority focuses on how pressure from the perceived authority to act extremely is followed without question, and once that authority is removed, the need to act in that manner is also

removed. Coercive radicalization could also be similar in this regard to obedience to authority whereby those who are experiencing the coercive radicalization may only be internalizing the more extreme ideology and behavior while the “leader” is there.

1.3.3 Cognition

Understandably, cognition is a prominent feature in many of the theories. Cognition is a broader theme where it can be seen from various angles from cognitive development, cognitive x situational shifts (GST, SMT, network theory, and role identity), to purposeful cognitive manipulation (coercive radicalization). All these cognitive theories suggest that the cognitive aspect leading to more extremism eventually becomes an internal motivation via an external influence.

SCT and NIH both stipulate that there is a cognitive development that creates a cognitive map (SCT) or personality (NIH) based on other’s behavior and events that individuals witness and experience. For instance, if an individual were to witness other’s behaving extremely, they could then incorporate that behavior and mimic it according to SCT. If an individual were to experience a crisis, such as a fight with a family member over different cultural expectations, this cognitively creates an extremist personality if the crisis is handled maladaptively, according to NIH. These theories, like in both themes above, tend to have less focus on predispositions that could influence the perception of the external situations as being more extreme. These theories have an “extremist” mindset/development through situational influences, and this is a shared feature with GST, SMT, network theory, and role identity which feature situational stimuli causing a cognitive shift.

Like NIH, GST focuses on situational strains (i.e., crises) that then create a shift in TFBs. It is not an experience of one strain but a collection of strains that instigates pressure or incentive to cope with negative emotions, which create the motivation to alleviate them often through aggression and violent radicalization. This motivation could implement a cognitive shift according to GST. SMT, network theory, and the French sociological perspective similarly have motivation leading to cognitive shifts. For these theories, the motivation has to do more with the other individuals they spend time with and become part of an in-group with based on shared experiences, such as discrimination or loss of culture. These shared experiences create cognitive shifts towards more extreme ideology as the group and its members become more extreme. This is likewise in role identity where individuals identify with a role more strongly after other’s

responses validating that role. For instance, if a guard gave orders to a prisoner, and a prisoner followed those orders, the guard would begin to perceive themselves as a guard. Thus, as the prisoners respond to the guards' orders, the guards identify more as guards, creating a "guard" cognitive shift according to role identity theory. The cognitive shifts in these themes could then also be explained by SCT whereby the shared experiences of the group also create a cognitive map where the group members begin to hone in on and perceive more of the same experiences as the group.

While most of the theories postulate that there is a cognitive shift due to external stimuli, as is also the case with coercive radicalization and role identity, coercive radicalization theorizes how individuals can become more extreme and radical cognitively through intentional propaganda. Coercive radicalization is a top-down form of cognitive, and subsequent behavioral, manipulation in order to get individuals to align with a "leader's" ideology through rigid control of a "follower's" habits. Thus, the cognitive shift may lead to ideological uptake through the direct cognitive manipulation. Cognition is a commonality across several extant theories, and all of the theories that contain this aspect focus on an external stimuli influencing cognition.

1.3.4 Group Dynamics

As with cognition, group dynamics in the theories leading to extremism takes several different perspectives. For instance, in coercive radicalization, group dynamics could influence individuals along an extremism pathway by seeing group obedience to commands, leaving little room for individuals to feel there is another choice but to follow and believe the indoctrination. On the other hand, group dynamics in SMT see the group gradually and collectively begin to adopt more and more extreme ideology through a consistent exposure to radical beliefs within the group. SMT differs from coercive radicalization in that SMT posits it is more of a bottom-up effect than a top-down effect towards extremism. In role identity, group dynamics influence how individuals could perceive their role by interpreting and following how others identifying in that role behave. Thus, if the other members behave more extremely, according to role identity, then the others who identify in that role as well should follow the more extremist behavior. Network theory and the French sociological perspective have a different approach on group dynamics. Both of these perspectives theorize individuals have internal motivations to seek out like-minded extremist individuals to gain a sense of belonging. For network theory, the core of what binds the group together and leads towards more extremism is a shared sense of the same

moral violations (e.g., discrimination) whereas the French sociological perspective the group dynamic revolves around regaining of a lost culture. An aspect that could be relevant to these theories and extremism would be how some individuals are able to resist the power of the group and not engage in extremism even when the group is.

1.3.5 Rigidity

The last theme from the “knitting” analysis is rigidity. Rigidity can be seen in the extant theories in terms of only being able to respond in one way (i.e., repeated patterns of behavioral response), leading to more extremism. GAM, SCT, and frustration-aggression hypothesis all postulate rigidity leading to more extremism through repeated patterns of responses in similar ways. However, what is hypothesized to create the rigid responses are different. GAM focuses on the consistent over- or under-regulation of emotions whereas SCT focuses on how one’s TFBs produce a hyperawareness to them in one’s environment that then elicits the same responses to the stimuli, both potentially leading to more extremism depending on the emotions/TFBs the individual has. The frustration-aggression hypothesis focuses on frustration and how experiencing it leads to only one outlet, aggression. Thus, there is rigidity through repeated behavioral patterns,

Rigidity can also be seen as developing a trait or dispositional trait that results in an inflexible mindset (NIH) and where aspects are controlled (coercive radicalization, obedience to authority), which in turn result in more extremism. NIH stipulates that if an individual handles crises maladaptively, an “extremist” mindset develops. Once this mindset is developed according to NIH, it is a persistent personality trait that creates dogmatic outlooks and responses to that mindset, demonstrating rigidity. Coercive radicalization and obedience to authority also share theories that dogmatic and rigid responses lead to more extremism. Both of these theories have top-down “orders” producing extremist behavior where individuals follow the indoctrination or directive of the perceived authority. The authority could take various forms from a charismatic leader of a cult to a scientist giving instructions to a military commanding officer. All of which would produce behavioral responses that align with the authority.

Overall, there are other similarities amongst the theories with rigidity. The theories share a more linear process to extremism through rigid TFBs, emotions, and/or responses. The theories in this theme do not postulate if dispositions could influence the pathways to extremism. However, the theories would allow for the possibility that there are individual differences that

could influence the susceptibility to rigid and dogmatic responses that may be seen in the extremism process. In addition to theorizing on the routes or pathways to extremism, there have been efforts to conduct research in the area, and an overview of this body of evidence will be discussed next followed by a discussion on the gaps in the extant theories and empirical research.

Table 1.2

Summary of Knitting Analysis

Theory/Model	Negative emotions	Internalizing External	Cognition	Group Dynamics	Rigidity
GAM	Anger, misattribution of arousal				Repeated patterns of reaction based on over- or under-regulation of emotions
SCT	Negative emotions create hyperawareness where then perceive them more often	Perceive external situations in line with TFBs	Cognitive development of hyperawareness to perceive more extreme behavior		Repeated behavioral patterns based on TFBs and react accordingly
NIH	Anger, isolation, helplessness		Situational crises lead to psychopathologies (if maladaptive)		Have a developed “extremist” rigid personality
Coercive Radicalization		Ideological uptake from the “leader’s” control (for some)	Thoughts, beliefs, attitudes change to align with the “leader’s” indoctrination	Group may feel have no choice but to adopt as others around them do	“Leader” controls all aspects to create rigid routine for ideological uptake
GST	Series of strains (e.g., financial)		Change cognition to cope with the strains leading to extremist action		
SMT		Group’s ideology becomes internalized and taken as truth	Adopt the group’s more extreme ideology	Persistent exposure in the group to radical beliefs and group members gradually adopt more and more extreme ideology	
Network Theory	Moral violations (e.g., discrimination)	Moral outrage results in personal crisis	Moral outrage from violations leads to more extremism through like-minded group membership	Group becomes more extreme through shared moral violations	
French Sociological	Loss of culture		Culture crisis leads to more extremism through like-minded group membership	Select to associate with more extreme groups to capture a culture	

Role Identity		Identify with the role and align thoughts to what is perceived of that role	Others respond giving legitimacy to the other's role identity
Obedience to Authority		Adhere to "orders" in the situation	Behave in accordance with the orders
Frustration-Aggression	Frustration (perceived or real)		Repeated behavioral patterns where frustration leads to aggression
Unanswered Questions	Dispositional influences that could increase susceptibility towards extremism. Internal motivations could have people seek out extremist outlets. Why some choose prosocial outlets. Extremism process is protracted for some.		

1.4 Overview of Research on Extremism

This section is a brief overview of some of the empirical research on extremism in areas that relate to the empirical studies of this thesis. More in-depth literature reviews are discussed within each of the empirical study chapters (Chapters 5 – 8), as they pertain to the varying types of extremism investigated in this thesis. The empirical literature on violent extremism has looked at the behavior as a consequence of internal dispositional processes (e.g., psychopathy or narcissism), cognitive processes (e.g., cognitive rigidity), external situational stressors (e.g., inability to achieve goals), and an integration of all. This thesis is mostly concerned with non-violent extremism where individuals may demonstrate support or sympathies for extremist behavior but do not perpetrate the behavior (i.e., bystander support) or the proclivity for extreme cognitions.

1.4.1 Extremism and Psychopathology

Psychopathology in extremism and terrorism has and still does garner a significant amount attention in research. Initially the focus of research was on psychopathy (Pearce & MacMillian, 1977; Cooper, 1978; Tanay, 1987) or other personality disorders, such as antisocial personality disorder (Martens, 2004) and narcissism (see Corner et al., 2021 for a review). However, as Corner and colleagues pointed out, many of the studies that investigated psychopathy and narcissism had methodological concerns, including the lack of clinical assessment of participants. Borum (2004) stated, "Terrorists are not insane or irrational actors... There is no common personality profile that characterizes most terrorists, who appear to be relatively normal individuals" (p. 4). This has led to many researchers examining participants with dispositional traits that have been shown to have some characteristics of clinical personality disorders, mainly the Dark Tetrad (Machiavellianism, narcissism, psychopathy, and sadism; Jones & Paulhus,

2013; Buckels et al., 2013; Chabrol et al., 2020). In Corner and colleagues' (2021) systematic review, they surmised in support of Borum (2004) that there seems to be no personality causal driver for perpetrators of terrorism/extremism. They did find that a commonality of superiority in three of the Dark Tetrad dispositional traits (Machiavellianism, narcissism, and sadism) was associated with radicalization. However, their inclusion criteria were overly stringent (e.g., needing causality) that disproportionately affected quantitative studies from being included. There are methodological concerns that rightly exclude some of the quantitative studies. With the stringent criteria impacting quantitative more than qualitative, this could have biased their findings or put heavier weighting on the qualitative results, missing some potential key facets. While their findings and review focus on the characteristics of perpetrators, it is unclear how dispositional traits influence bystander support for violent and non-violent extremism.

Overall, the findings highlight that extremism models should incorporate situational and behavioral facets in addition to dispositional components to reflect the complexity of the process of extremism, and there are very few that do so. There are few extant theories that incorporate dispositional traits being an influence towards extremism. NIH is the one theory that specifically outlines how psychopathology leads to more extremism if crises are handled maladaptively during crucial years (12-20; Abbasi et al., 2018). SCT does allow for interplay between individuals and their environment whereby individuals both influence and are influenced by their environment. For instance, those who have more aggressive tendencies can seek out situations to express aggression (Borum, 2011), and this is how individual differences, though not specifically psychopathology in particular, could influence a pathway towards extremism according to SCT. Additionally, both obedience to authority and role identity theory could be viewed as individual differences that could increase sensitivity towards extremism. For example, those who are more likely to either have strict adherence to an authority or overly identify with certain roles within extreme situations could have an increased proclivity for (bystander support for) extremism. Neither of those theories was posited in this manner; however, viewing these theories as an individual difference could provide new insight into how individual differences and dispositional traits could influence the pathways towards extremism.

1.4.2 Extremism and Cognition

There is research that has investigated cognitive rigidity, or inflexibility, and extremism. Zmigrod and colleagues (2019) found that an objective assessment of cognitive inflexibility

predicted a willingness to protect an ingroup, and that predicted a willingness to die for that ingroup. They surmised that cognitive rigidity was an antecedent for extreme ideology. It is important to highlight that their findings are based on ingroup scenarios, and this could be a crucial factor in their findings, as individuals have been shown to use stereotyping and view the world through an ingroup/outgroup lens, especially when under stress, time pressure, and limited cognitive resources (Taylor, 2009). Thus, using ingroup scenarios alone may produce different results that cannot be extrapolated to other situations, and this is a gap in the area.

Additionally, cognitive rigidity has been investigated with other aspects of extremism. For instance, cognitive rigidity has been found to be associated with political ideology and polarization (e.g., right versus left; Jost et al., 2017). Political ideology and polarization are not new concepts nor lenses to view and examine extremism. While there are ideological differences between the far-right (e.g., anti-immigrant views) and far-left (e.g., anti-capitalistic views; Counter Extremism Project, 2022), research is emerging to suggest that those on either extreme ends of the political spectrum actually have many psychological similarities (Zwicker et al., 2020; van Prooijen & Krouwel, 2019). For example, research has found that those who held more politically extreme beliefs, regardless of being left or right, demonstrated more ideological stability over time compared to moderates (Zwicker et al., 2020). This stability in ideology ultimately means individuals were not altering their views (i.e., cognitive rigidity). While not altering one's ideology may not equate to extreme cognitions, it could indicate a susceptibility to extremism.

Rigidity, as discussed in Section 1.3.5, is a commonality amongst many of the extant extremism theories. In terms of cognitive rigidity, NIH is supported in part from the research (Zwicker et al., 2020) in that there is stability in the personality that can lead to more extremist mindset. However, there are no other extant theories that include cognitive rigidity. Most of the extant theories focus on rigidity in terms of repeated patterns of behavior in response to external stimuli. This could be due to some aspect of cognitive rigidity, but the current extant theories do not postulate it as such, and this rigidity, along with cognitive rigidity, is something that is incorporated into my model.

1.4.3 Extremism and External Stressors

Situational or external cues are heavily focused on in the extant theories, and there is empirical research that supports this focus. As discussed above, cognitive rigidity can influence

the pathway to extremism (Zmigrod et al., 2019). However, cognitive rigidity does not equate to cognitive motivations for extremism, but motivational aspects are important to understand extremism. As research has found, motivation is also associated with more extremism. For instance, in a series of studies, McGregor and colleagues (2013) found that anxiety about motivational conflict (i.e., not being able to achieve one's goals) predicted more religious and ideological extremism. The authors surmised that it was the threat (i.e., external stressor), real or perceived, of not being able to achieve goals that predicted more extremism. It could be this threat of not being able to achieve goals creates an incongruent state between what an individual wants to achieve and what they feel they can achieve, and this leads to more extremism. However, this has not been researched yet. Other researchers found that economic anxiety (van Prooijen et al., 2015) and fear of uncertainty (McGregor et al., 2013) were associated with political extremism on both the left and right. There are individual differences that are influencing the pathway to extremism as well.

As discussed in Section 1.3, external stressors influencing the pathways towards (bystander support for) extremism are heavily prominent in the extant theories. In fact, all extant theories have some form of external stressor as a feature even though the focus on different external stressors varies by theory (e.g., discrimination, lost culture, crises). As can be seen from the empirical research above, the frustration-aggression hypothesis is often investigated. This could, in part, be due to its testability in experimental designs; however, this theory has found evidentiary support in the research to some degree.

1.5 Gaps in the Extant Theories and Literature

From the “knitting” analysis, there are two overarching questions that arose. The first question or gap revolves around the limited inclusion of individual differences or predispositions. The above theories have less focus on individual differences that could increase one's propensity or susceptibility to engage in extremism. However, predispositions could influence the perception of the external situations as being more extreme and then respond in kind. Another aspect that could be relevant is individuals choose situations to “match” a predisposition, which would then allow or “accept” extremist behavior expression. For instance, those higher on the dark personalities (discussed more in Chapters 2, 7, and 8) or other traits like lower on critical thinking (discussed more in Chapter 8) may influence one's proclivity for antisociality and support for extremism, which could in turn lead to a self-selection into groups

that engage in extremism. Also, cognitive rigidity is generally examined through the lens of thinking patterns; however, it could also be examined through triggers in dispositional traits that elicit dogmatic responses. This has not been investigated previously in terms of extremism.

This leads to the second question that arose from the knitting analysis: internal motivation. Most of the theories in the analysis focus exclusively on external factors that in some way change an individual's TFBs, emotions, or behavior to become more extreme. While predispositions could be considered as an "internal" susceptibility towards extremism, there are other aspects that could also result in internal motivations to engage in extremism. For instance, individuals may seek out extremist groups that align with their pre-existing beliefs on specific issues (e.g., immigration) or individuals may wish to be accepted by extremist group members, and as such, behave in consistent ways with the group to gain that acceptance. Another question that arises from this is what is the process people go through when they do not act congruently with inner extremist TFBs. Does this create psychological turmoil and how does that affect the individual longer term in their support for or engagement in extremism?

In addition to the questions that remain, allowing for more interplay between factors (e.g., bidirectionality) could be beneficial to include in models rather than a linear process towards extremism. The theories present a more linear process to extremism where they focus on how external cues alter the inner state of a person, creating the context for radicalization. However, more interplay and a continually fluctuating situation could be important in the extremism process as well, and this interplay could explicate why and how some individuals are able to resist the power of the group and not engage in extremism even when the group is. For example, While there are external stressors that predict more extremism, there are many individuals who face similar, if not identical, situations that do not engage in or support extremism, highlighting that it could be a combination of factors that increase the susceptibility to (support) extremism. Addressing gaps could then allow for more detailed examinations into how some individuals are able to resist engaging in extremism and/or engage in prosocial activities when others in similar situations are unable to resist or how the extremism process is protracted for some individuals. These gaps are not included in the extant models but are incorporated into my model that is discussed in Chapter 2.

1.6 Overall Chapter Conclusions

There are numerous theories on how perpetrators come to sympathize with and support or engage in violent extremism, and this chapter has presented several of these theories. While each theory has strengths, they all also have limitations. Trying to expand and potentially integrate aspects of these into a new framework or lens to view the extremism process was the main goal of developing the suppression-incongruence model of extremism. The overview of the literature in this chapter demonstrates the diversity and varying angles in which extremism is researched from dispositional, cognitive, to psychosocial elements.

While the presented theories all contribute and offer insight into the radicalization process, they also have limitations and gaps. There are two key areas currently neglected in the models/theoretical frameworks. Many models are linear in nature and have very little interplay between external cues and inner motivations. Most focus on how external cues change the inner beliefs, but there is less discussion on the interplay between the two. It is not only external cues that alter core beliefs but also inner beliefs that influence the external cues. Due to the linearity of many theories, the variability of the paths on the radicalization process is limited, meaning the theories predict the same radicalization pathway for all. Given the dynamic nature of radicalization, this is a significant gap with the extant theories. All models underscore that radicalization is a process and not instantaneous. However, there is a lack of theory on how the variability in the time it takes for individuals to radicalize, and after radicalizing, how long it takes them to escalate into violent radicalization. While there will inevitably be a large range in the length of time people radicalize, current models fail to explicate why for some this process is protracted and for others it is not, why some take a prosocial route before becoming radicalized, or why some continue to stay on a prosocial route. The underpinning of this thesis is the new model I developed, the suppression-incongruence model of extremism. This model attempts to explain a new angle to understand pathways to extremism with dispositional, cognitive, and behavioral facets to create a more dynamic model that incorporates but expands on the extant research findings.

From this research overview, one can see there are many lenses in which to approach violent and non-violent extremism. Similar to the extant theories, much of the empirical research, qualitative or quantitative, focuses on characteristics of perpetrators or attempts to extrapolate their findings to perpetrators (Bartlett & Miller, 2012). For this thesis, the focus is specifically on

bystander support of extremism, not perpetrators. As is discussed more in Chapter 2, the importance of bystander support cannot be underestimated. Without bystander sympathy or passivity, many forms of extremism would not be effective nor garner as much support without opposition, and this is why bystander support is as important to investigate as perpetrators.

Chapter 2

2.0 Suppression-Incongruence Model of Extremism

For this thesis, I am investigating three forms of extremism: hacktivism, state-sponsored extremism, and proclivity for extreme cognitions (i.e., proclivity to think in conspiratorial terms or conspiratorial mentality; these terms are used interchangeably throughout the thesis). Before exploring the concepts and theoretical model that formed the framework of this thesis, it is worth discussing a few of the anecdotal real-world examples and a psychological theory that were the etiological “inspiration” for my model. Then my suppression-incongruence model of extremism will be presented.

2.1 Real-world Example Etiology

Throughout history, there is no lack of examples of human brutality and extremist behavior, and an entire thesis could be devoted to the last half of the 20th century alone. Here are three specific examples during varying toxic situations and epochs that look at individual differences that led to the research questions and focus of the current thesis: does suppression-incongruence lead to more extremism?

Firstly, Ilse Koch’s display of depravity for human life occurred during World War II in Nazi Germany. Koch was married to the Commandant of the Buchenwald concentration camp. Koch became known as the “Witch of Buchenwald” for her seemingly sadistic and excessively harsh treatment towards prisoners of the camp, which, given the circumstances, is an extraordinary disturbing label (Jewish Virtual Library, 2022). Survivors of the camp testified that she would ride on horseback whipping any prisoner with whom she came into contact. She was further accused of searching for prisoners with intriguing tattoos to get their skin for everyday items, such as purses and lampshades (Kinzer, 1995). If the tattooed items were not to her liking, she reportedly had others killed for their more vibrant tattoos. Her behavior, along with her husband’s, even drew disciplinary action from the Nazis. Does this indicate she suppressed aggressive traits before the war that she then “released” at Buchenwald now that she had the opportunity?

Next, the massacre at My Lai (March 16, 1968) during the Viet Nam war saw approximately 500 unarmed and non-resisting women, children, and elderly slaughtered in a matter of hours by the US army after being ordered into the village (Cookman, 2007). Some

soldiers refused to follow orders while others went above and beyond the orders, indicating that individual differences do survive extreme situations. The soldiers razed the village, looted, scalped, raped, tortured, and cut off body parts for souvenirs. While there were vastly different reactions between several soldiers and officers, there is no starker contrast than between Lt. William Calley and Warrant Officer Hugh Thompson. Calley ordered his men to “shoot anything that moved” and killed My Lai villagers himself when his men refused (Hersh, 1969). Thompson saw the massacre from the helicopter he was piloting and landed the helicopter between his fellow army and the civilians fleeing, warning he would fire on his own troops if they did not stop. This effectively ended the slaughter. Thompson was eventually awarded the Soldier’s Medal for his role in saving many civilians at My Lai while Calley was the only one convicted for the massacre (Wiener, 2018). How did Calley and Thompson react so differently in the same situation? Was Calley more sensitive to aggressive situational cues?

Finally, the Stanford Prison experiment has received enormous attention within and outside of psychology (Haney et al., 1973). Ignoring the ethical concerns and methodological flaws of the experiment, the study did seem to capture some of the essence of what was occurring in real-world toxic examples. Briefly, the experiment recruited participants from a newspaper advertisement. A simulated prison was built, and participants were allocated to either be a guard or a prisoner by a coin toss. After three days, the experiment had to be terminated due to the excessive psychological and physical distress and abuse that the prisoner participants were under and subjected to. The findings that are most relevant to the current work were the individual differences amongst the guard participants where approximately one-third of the guard participants refused to follow the experimental instructions and even did small favors for the prisoners, another one-third stayed within the parameters of the original instructions, and the final one-third exceeded the instructions and were excessively abusive. In particular, one guard participant was nicknamed “John Wayne” for his toughness. In post-experiment interviews, a prisoner participant replied to “John Wayne” in response to his abusive behavior:

I don’t know. But I don’t think I would have been so inventive. I don’t think I would have applied as much imagination to what I was doing. Do you understand? ... If I had been a guard, I don’t think it would have been such a masterpiece [of punishment] (Zimbardo, 1989, as cited in Haslam & Reicher, 2007, p. 619).

Was “John Wayne,” like Koch, suppressing his authentic self and “released” it in the experiment or was he like he more sensitive to situational cues or a combination?

While some level of violence and/or authoritative behavior can be necessary in real-world events and analogue studies, some people appear to get an extra reward from their excessively aggressive behavior. All three of these situations exemplify the stark contrast in individual differences that can exist even within the same highly toxic situations. There seems to be similar patterns between the toxic situations and analogue study. There are those who refuse to participate or do the absolute minimum, there are those who go along, and then there are those who are excessive in their violence. Of the multitude of questions that arise from these situations, the main ones that influenced this research for the thesis were: (1) how can people who seemingly had “normal” lives prior to a toxic situation engage in such extremist behavior during the toxic situation?; (2) how can the individual differences between people in the same toxic situation vary so vastly?; and (3) do people suppress aggressive predispositions and “release” them once they find a situation where aggressive behavior would be tolerated?

2.2 Theoretical Etiology

The theoretical ideology comes from a model that was posited by Philip Brickman. Brickman’s (1980) model attempted to explain how our true selves (e.g., our thoughts, feelings, beliefs [TFBs], emotions, and behaviors) and situations interact to create different responses depending on how “real” they feel. We have all been in situations where we have suppressed how we were truly feeling because it could be deemed inappropriate (e.g., smiling at a humorous memory at a funeral) or when we behaved in ways we did not want to, such as drinking due to peer pressure. However, had we smiled or declined to drink as we felt, our (TFBs), emotions, and behavior would have been congruent, meaning they matched. This then raises the question of what is happening psychologically when our authentic TFBs, emotions, and behaviors are congruent or incongruent?

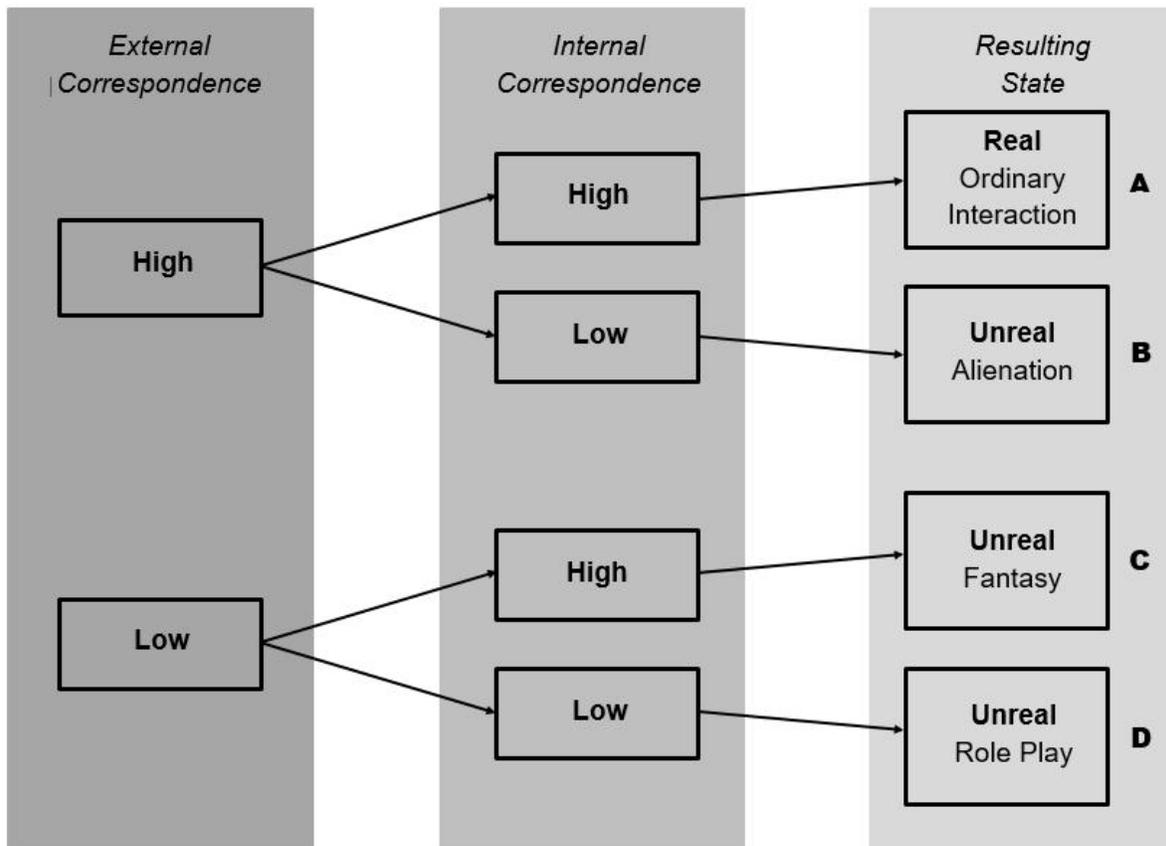
According to Brickman (1980), when our true selves and actions are congruent: (1) we assign a sense of reality to them, meaning they exist and are important, (2) they are not fantasies, (3) they are not our imaginations, (4) they are not disassociations, (5) there is a significant amount of emotion beyond the action, and (6) there are consequences (good or bad) to the behavior. He argued that a core determinant of human behavior is this sense of reality that we

have about the world around us, and there are two facets to attributing reality, which he called external and internal correspondence, that underpin this sense of reality.

For things to feel real, there must be both high external correspondence (EC) and high internal correspondence (IC). EC relates to our actions—simply put, do the situational cues allow us to act on and/or validate our true feelings? The second form of correspondence, IC, pertains to the extent to which our inner feelings correspond with our actions. In other words, IC is simply if we express our true feelings. Ultimately, this means to have reality, you have to have the “right” situation to express your true feelings and the “right” feelings that match the situation. Without this sense of reality, people are then less committed and invested in their behavior (see Figure 2.1 for an interpreted summary of Brickman’s model).

Figure 2.1

Elements of Brickman’s Attribution Theory (interpreted from Brickman, 1980)



In Brickman's model, a feeling of reality or congruence only occurs when both IC and EC are high. When both EC and IC are high (State A in Figure 2.1), a person expresses their inner emotions, the situation allows this expression, and there are real consequences. This is an ordinary interaction that happens frequently daily. Something as simple as asking for a glass of water because you are thirsty (high IC) from a server in a restaurant (high EC) who then brings you the water (real consequences) is an ordinary and real interaction. Another example could be as a witness recounts their assault (high EC), they visibly show their pain and anger toward the perpetrator (high IC), and the people in court listen (real consequences). Their recounting matches their true emotions, and the emotional expression towards the perpetrator is representative of those feelings, and people take in the information being expressed.

There are three conditions where there is a feeling of "unreal" or incongruence. When EC is high and IC is low (unreal – alienation), the behavior has no supporting emotions behind it (State B in Figure 2.1). For instance, if someone is simply going through motions robotically (high EC), such as sex trade workers who disconnect their emotions from their job, they are in the situation, but the sex trade work is only viewed as a job to pay the bills not part of who they are (low IC). There is then an incongruence. Alternatively, when EC is low, but IC is high (unreal – fantasy), the inner feelings are not acted upon as the dispositions would be perceived as inappropriate or irrelevant (e.g., against cultural norms; State C in Figure 2.1). If you imagine quitting your job because you despise it (high IC), but you know without the job you will not be able to pay your rent, preventing you from acting on the fantasy (low EC), the situation will feel unreal and incongruent. In the situation where both EC and IC are low (unreal – role play), there are no real feelings and no real consequences to any actions (State D in Figure 2.1; e.g., re-enacting a historical war). All the emotions expressed as a role-play character are not true inner feelings and if they shot someone during the scene, no one is actually harmed, therefore, no consequences, giving it a sense of unreal.

It is important to note that in Brickman's model EC and IC are not mutually exclusive and exhaustive; they are in perpetual interplay. This then means that, even if there was initial incongruence, over time it can develop into congruence through feedback loops. As a person goes through the motions, it begins to feel more and more congruent and true to who they are, or the situation feels more real. An example of this could be becoming a new parent. Initially, it may feel unreal, but as more people start to call a person Mom or Dad (high EC), this eventually

will be internalized that they are in fact a parent now (developed high IC), creating a sense of reality and congruence. This process in a sense is similar to how a self-fulfilling prophecy works according to Brickman's model: external cues influence your beliefs about yourself, and eventually, these beliefs get incorporated into who you are. The reverse is also possible: if someone were prone to aggressivity (high IC) but did not want to have difficulty with law enforcement, they may join a boxing gym to allow themselves to release the aggressivity (developed high EC). All social psychology studies could provide potential evidence for Brickman's model and the two pathways towards reality (or congruence). In fact, this is what spurred Brickman to posit his theory, as the basic premise of psychological experiments is that experimenters can create situations that alter participants' behavior based on either the created conditions or predispositions that participants bring to the experiment.

How can Brickman's model relate and be applied to extremism? In previous work (Dutton & Tetreault, 2009), Dutton and I theorized how excessively aggressive behavior could emerge through two paths during toxic situations, such as a war, riot, or even psychological experiments, in line with Brickman's model. The first path was for people who had underlying aggressive proclivities, but these stayed suppressed until a perceived acceptable situation allowed for their expression. The second path was for people who internalized cues from a toxic situation, who then acted in accordance with these new internalized cues, displaying aggressive tendencies in response. Brickman's model was novel, insightful, but complex. His model, while being applied anecdotally, has limited testability experimentally.

There are several facets that make testability experimentally challenging for Brickman's model. The first is it would not be possible to manipulate and randomly assign participants to any of the "unreal" (alienation, fantasy, role play) nor "real" condition. As Brickman's model posits, there is interplay between the external and internal that can eventually lead to "real." Therefore, it would indicate that everyone could be on different levels of adapting "realness." For instance, if someone were in a situation longer, theoretically, they may have internalized some of the external factors more than someone who is newer to experiencing the situation. Thus, I would argue that Brickman's model allows for a spectrum of "real," and as such, it would be challenging to know when (or if) "real" is achieved since "reality" is always in flux. From an experimental perspective then, this "reality" spectrum makes it challenging not only to manipulate participants and randomly assign into Brickman's four categories but also to compare

any two individuals, as they may have different levels of real or unreal. It may also be challenging for subjective measures to capture this feeling of “real” as well because an individual may not be able to assess their own level of real according to his model.

There are additional limitations to Brickman’s model beyond the difficulty of its testability with its application into aggression. First, individuals can engage in aggression without internalizing the external situation, meaning they act in accordance with the external situation, but it may not feel “real” according to Brickman’s model. The reverse could also be true where people do not engage in aggression even if they have the internal proclivity to and the external situation presented an opportunity to express it. Second, dispositional traits could influence how people perceive a situation and their internal states of “real,” and these are not accounted for in Brickman’s model. Despite these limitations, Brickman’s model brings forward value in how internal and external factors interplay to create different perceptions in people that could influence how people engage differently in situations. Rather than a state, perhaps “real” could be viewed as a dispositional trait.

For this thesis, I have developed a theoretical model (next section) inspired by some of the concepts in Brickman’s model to examine the overarching research question: does suppression and incongruence between one’s authentic TFBs, emotions, and behaviors lead to more extremism? Generally, I argue that when individuals suppress or are forced to suppress their TFBs, emotions, or behaviors, they get a form of incongruence and “unreal” according to Brickman’s terminology. This incongruence then can only be tolerated for so long and needs some outlet, which could then lead to more extreme TFBs, emotions, and/or behaviors.

It may prove useful to outline our suppression-incongruence model holistically now before delving into a deeper discussion of its components and the concepts and theories that influenced its development. To aid this, I present this analogy for my model: When you place a pot of milk on the hob burner and place a lid on it, it starts to warm up and build pressure. The longer you leave it, the more pressure that will build up. To prevent it from boiling over, you can adjust the lid to release some of the pressure, but if you replace the lid fully onto the pot, the pressure will build quickly, and the milk will start to boil again. However, without relieving some of that pressure, it will boil over into an explosion. A similar sequence may lead to extremism within my model. When you start to suppress a TFB, emotion, or behavior, some internal pressure starts to build. The longer the suppression/incongruence is maintained, the more pressure one feels,

and an outlet for this pressure needs to be found. If someone finds a healthy constructive outlet, it alleviates some of that pressure, if only temporarily. If the outlet is not effective, the lid goes back on and the pressure from the suppression/incongruence builds again. When the pressure becomes too much, the eventual release is more extreme than if it had been managed in the earlier stages.

In the next sections, I will discuss the extant concepts and theories that my model incorporates in the first steps of the process, followed by an explanation of my model, how my model amalgamates and offers a new perspective on the current theories on extremism, and lastly how the empirical studies investigated my model.

2.3 What is Suppression and How Does It Work?

Suppression, also referred to as overregulation, is an active strategy to inhibit one's own TFBs, emotions, and behaviors (Wegner et al., 1987; Abramowitz, 2001; Inzlicht & Berkman, 2015). There are three reasons why individuals suppress. (1) An individual may suppress their emotion as a way of making that emotion more manageable (i.e., to self-regulate the emotion). (2) An individual may suppress their TFBs in relation to a stressor. (3) An individual may also suppress their intention to act to respond to the stressor (i.e., behavior avoidance/suppression effects; Robertson et al., 2012; Gross, 2002; Abramowitz, 2001). Avoidance, where individuals escape from or avoid the situation that causes the distressing TFBs, emotions, or behaviors, is often utilized (Robertson et al., 2012).

2.4 Consequences of Suppression and the Theories behind Them

Suppression use has been shown it can be an effective strategy in the short term (Mund & Mitte, 2012); however, it is not always effective and can lead to other unwanted consequences (Dryman & Heimberg, 2018, Yam, 2018). One such consequence is called the rebound effect where the unwanted TFBs, emotions, or behaviors an individual is actively trying to suppress (i.e., the targets) actually increase and become hyperaccessible (i.e., individuals become hyperaware of what they are trying to avoid; Wegner et al., 1987; Wegner, 2009; Wegner et al., 1987; Yam, 2018). For instance, if someone were trying to ignore a negative comment made about them on social media by actively trying to forget it (i.e., suppression), they end up having more intrusive or unwanted thoughts about it than if they were not attempting to suppress thinking about the comment. The rebound effect has been shown to lead to greater emotional reactivity and physical arousal while decreasing (a) positive (but not negative) affect, (b) the

ability to find adaptive (e.g., prosocial), non-aggressive solutions, and (c) social networks with people who hold different attitudes, feelings, or behavior (Robertson et al., 2012). These suppressive rebound effects may then lead to a feeling of incongruence (discussed below).

In the broader psychological literature, suppression has been explored widely and within cognitive behavioral formulations of psychological distress has been linked to presentations, including depression, anxiety, and obsessive compulsive disorder (Campbell-Sills & Barlow, 2007; Davidson et al., 2002). Over time, emotional suppression can result in the rebound effect, leading to more, and stronger, emotions (Gratz & Roemer, 2004). For example, suppression can lead to a decrease in positive but not negative affect (Gross, 2002), a depletion in decision making skills (Richards & Gross, 2006), and a reduction in elaborate information processing (Schemeichel et al., 2003). Thus, the act of emotional suppression and rebound (emotion suppression effects) can migrate the emotion from less extreme (e.g., anger) to more extreme (e.g., rage; Robertson et al., 2012). Previously, experimental research found that parents randomly assigned to suppress their emotions led to fewer positive interactions (i.e., colder and more disengaged) with their children (Waters et al., 2020). In a cross-cultural study, more emotional suppression was associated with increased psychological need, increased frustration, and poorer well-being (Benita, 2020). Emotional suppression has even been associated with earlier mortality, including mortality from cancer and cardiovascular disease, in a longitudinal study (Chapman et al., 2013). These findings highlight that suppressive effects are overwhelmingly negative. In short, while suppression may result in short-term alleviation of distress for some individuals, previous research has demonstrated that any such relief is only temporary and leads to rebound effects.

2.5 Theories on Why Rebounds Occur

There are two main theories that have emerged to explicate the psychological mechanisms and consequences that occur when individuals engage in suppression: Limited Resource Theory (Baumeister et al., 1998) and Ironic Process Theory (Wegner & Zanakos, 1994).

2.5.1 Limited Resource Theory (Ego Depletion)

Limited Resource Model of Self-Regulation proposes that self-regulation is determined by a regulatory energy resource (Baumeister et al., 1998). These energy resources are finite, and if those become too taxed or depleted, it becomes challenging for continued suppression to be effective. For instance, if an individual were to be suppressing the desire to act aggressively, they

may be able to resist a provocation at first. However, the longer they have suppressed, the more difficult it will be to resist subsequent provocations because their mental resources will be depleted. This could then result in an increased likelihood to “release” their aggressivity. They will have lost the self-control or willpower to refrain from acting aggressively. Baumeister and colleagues (1998) posited that the what is suppressed is irrelevant; it is any suppression that depletes the resources and self-regulation capabilities. Thus, the suppression and rebound tasks can be entirely unrelated. The theory and evidence in this area has mostly focused on emotional suppression and suggested that suppression can lead to externalizing problem behaviors, such as overeating or other compensatory behavior for the suppressed emotion and internalizing negative emotions (e.g., depression, anxiety; Dryman & Heimberg, 2018). In the broader psychological literature, this model has primarily been considered in relation to health and well-being (Yam, 2018).

2.5.2 Ironic Theory

Ironic theory postulates that the act of trying to suppress a thought leads to that very thought to become hyperaccessible (i.e., hyperawareness), causing the thought to become more frequent and intrusive (Wegner & Erber, 1992; Wegner, 1989; Yam, 2018). These intrusions (or rebounds) do not require significant attention to occur. Wegener and Erber (1992) stipulated that rebounds are due to two cognitive processes—controlled distractor and automatic target searches. The controlled distractor search process involves an individual actively trying to think of something else than the thought that is trying to be suppressed. The automatic search process monitors the situation by constantly searching for the unwanted thought to determine if the controlled distractor search needs to be activated to suppress the thought if it is detected. However, these searches ironically keep the target thought in an individual’s consciousness, resulting in the rebound effect where the attempts to suppress the thought make it more readily accessible. The control distractor search process requires more cognitive effort than the automatic search process. A central aspect of this theory is that suppression, particularly in the long-term, tends to be maladaptive to the extent that it leads to rebound effects, and the TFBs, emotions, and behaviors seek to return later in a more extreme manifestation than if it had been expressed in the first instance (e.g., anger manifesting into rage).

The studies in this thesis are focusing on the fact that rebound effects occur and not attempting to ascertain which theory on rebounds is correct (for a review, see Yam, 2018). For

the current research, I accept that both could be correct, and the focus is on how of the process of rebounds could create an incongruent state. As discussed in the Preface, there are consequences of rebound effects that increase the likelihood individuals reacting aggressively (Robertson et al., 2012). In another study that also focused on behavioral responses to cognitive suppression, the researchers found that cognitive suppression about aggression led to more aggressivity (Denzler et al., 2010). This study only included women and the measure of rebound aggressivity, though tested and found to be a measure of aggressive behavior (Denzler et al., 2009; Mussweiler & Förster, 2000), was selecting negative photographs, highlighting there may be ecological validity concerns. Nonetheless, it does demonstrate that cognitive suppression leads to rebound effects of aggressive behavior as well.

2.6 What Is Incongruence and What Are the Consequences of It?

Congruence refers to an alignment between two or more aspects of our inner TFBs, emotions, behaviors, and situational forces with which we are faced. Conversely, incongruence refers to the misalignment between TFBs, emotions, behaviors, and situational forces with which we are faced. As long as one part of the affective, cognitive, or behavioral system is misaligned, this is experienced as inauthentic and incongruent (Grawe, 2004). As mentioned in the Preface, the Stroop test is a simple example of incongruent (blue but have to say red) and congruent (blue and have to say blue) states (Williams et al., 1996). Another example would be an individual who wishes to lose weight and so eats healthily and exercises regularly. Their thoughts or motivation to lose weight align with their actions, creating a congruent state. Using the same example, incongruence would be an individual who wants to lose weight by eating healthily, but then subsequently binges on chocolate daily. In both situations, the individual has the same TFBs, but in the second scenario, there is a misalignment between the thoughts and actions, creating an incongruent state.

When TFBs, emotions, and behaviors are congruent, there is a sense of harmony and no inner turmoil. Incongruence has been associated with psychological distress (Grawe, 2004), negative feelings, and poorer mental health outcomes (Berking et al, 2003; Paul & Moser, 2006); therefore, being congruent and being validated for one's true authentic self have more positive outcomes (Finlon et al., 2015). Being in an incongruent state has also been associated with more negative emotion and fewer prosocial attitudes (Schmidt-Barad & Uziel, 2020). For example, a study that looked at participants who expressed their incongruent motives (incongruence

between implicit and explicit motives) versus those who suppressed their incongruent motives found that those who expressed had better health outcomes (Schüler et al., 2009). Researchers in a study found that the violent offenders compared to controls had significantly more difficulty identifying incongruent facial-body expressions (e.g., smile but aggressive body posture; Kret & Gelder, 2013). The authors surmised that violent offenders may have a cognitive bias and interpret incongruent stimuli as aggressive or threatening, suggesting violent offenders may be honed to perceive aggression and respond with aggression more frequently. These studies could indicate that being in an incongruent state, especially for those who have a proclivity for antisociality, may influence self-regulation and prosocial attitudes, and these aspects could influence the pathways to extremism.

2.7 The Suppression-Incongruence Model of Extremism

This section provides a holistic overview of the concepts and theories of this thesis, and I will discuss my suppression-incongruence model here in detail. Chapters 5 through 8 contain detailed discussions of the theories and concepts as they pertain to each study. This chapter creates a framework that complements and expands on extant theories to synthesize existing knowledge in the area and to inform subsequent studies. This chapter's purpose is to contribute a theoretical model that accounts for the cognitive, dispositional, and behavioral aspects of the extremism process and indicate how this framework can drive new research, especially towards building resilience and limiting susceptibility to extremism pre-emptively. The concepts and theories I outline here in this chapter are as they pertain to how my model fits into the broader psychological research and how each empirical study examines different facets of my model.

2.8 The Suppression-Incongruence Model of Extremism Explained

I have created a model that explains the earlier stages of when people begin to develop or show more extremist beliefs, thoughts, or sympathies and to investigate what conditions and dispositions might influence the development of (or resistance to) extremism. In brief, my model posits that: suppression leads to incongruence/incongruence leads to suppression; an incongruent state creates an inner awareness of the misalignment; the inner awareness leads to a hyperawareness/hyperaccessibility of that misalignment; the hyperawareness/hyperaccessibility leads to rebound effects because it cannot be maintained indefinitely; finally, the rebound effects motivate an action—prosocial or antisocial (see Figure 2.2).

The model here integrates two core concepts which, taken together, can provide a useful lens through which to explore some of the psychological processes that may be implicated in violent radicalization into extremism. The first is suppression, and the second is incongruence. Suppression is a core self-regulatory mechanism that has been widely researched in the empirical literature, both in terms of health behaviors and violence and aggression. Contemporary psychoanalysts differentiate between suppression (as the voluntary removal from consciousness of unwanted thoughts and feelings) and repression, which involves unconscious processes; i.e., we purposefully suppress through will power, but repress subconsciously (Berlin & Koch, 2009). My model focuses on the former, but I acknowledge that both are likely at play in the processes being explored. As discussed earlier in this chapter, the best evidence on suppression, be it suppression of TFBs, emotions, or behaviors, is that it has the potential to have unintended and undesirable rebound effects. This rebound effect (Wegner, 2009; Wegner et al., 1987; Yam, 2018) is central to my model of extremism.

Importantly, TFBs, emotions, and behaviors do not arise in isolation from one another but rather as part of an integrated system. As such, there is a need to account for what arises where either (a) multiple forms of suppression occur at once, and/or (b) where some aspects of the system are suppressed while others are not. This introduces the second dimension to my model—congruence. In a congruent system, TFBs, emotions, and behaviors are aligned and mutually supportive, leading to feelings of authenticity. However, as long as one part of the system is not aligned, then this is experienced as inauthentic and incongruent. As proposed by others, this incongruence in the system can lead to feelings of not being right (Gratz & Roemer, 2004; Schemmich et al., 2003; Gross, 2002; Robertson et al., 2012; Brickman, 1980).

My argument is that one way of understanding violent radicalization and extremism is through the lens of suppression x incongruence. Suppression can occur in two distinct ways in my model. (1) Individuals can suppress their TFBs, emotions, or behaviors because there is an incongruence between at least one of them, thereby suppression is being used as an internally-motivated coping strategy. (2) Individuals are forced to suppress their TFBs, emotions, or behaviors from an external situational force, and that forced suppression creates the incongruence. Thus, suppression and incongruence are bidirectional—incongruence can lead to suppression and suppression can lead to incongruence. For instance, when an individual has radicalized TFBs but suppresses the behavior, then the individual can respond in one of two

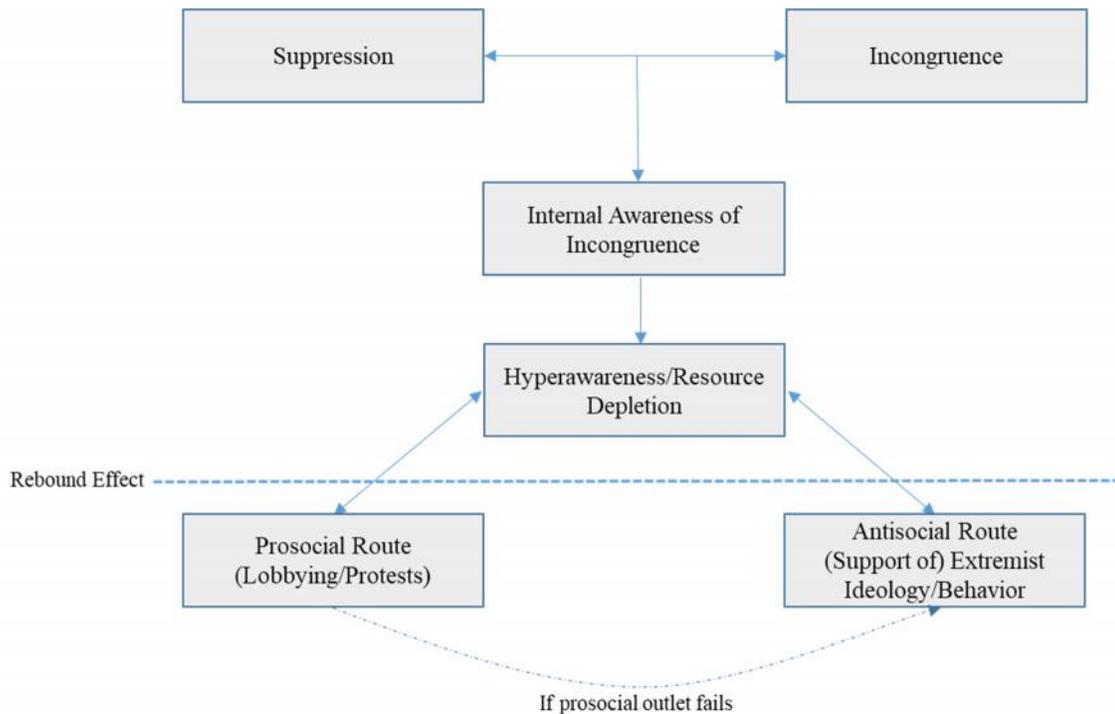
ways. First, they can modify their behavior to align with the TFBs, thus extreme TFBs lead to extreme behavior but congruence. Second, they can suppress the radicalized TFBs in an attempt to become congruent with their non-extremist actions. I argue that it is the second response that leads to a perpetual state of incongruence that cannot be maintained indefinitely, and this incongruent state will eventually lead to rebound effects, which in turn will lead to more extremist TFBs, emotions, or behaviors.¹

To give a real-world example of the suppression x incongruence related to extremism, we can look at Alexandre Bissonnette. On January 29, 2017, Bissonnette walked into a Quebec City mosque during evening prayer and opened fire, killing six and injuring 19. He had no known affiliation to any terrorist organizations and was previously unknown to police (Coletta, 2018). Unlike many, Bissonnette turned himself into police, and during his police interrogation, it was discovered Bissonnette had been contemplating an attack on immigrants for nearly three years. In the weeks leading up to the attack, he had become more vehement in searching online for mass murderers, white supremacist and alt-right groups, and weapons. His breaking point, he claimed, was Canadian Prime Minister Justin Trudeau's tweet, "To those fleeing persecution, terror & war, Canadians will welcome you, regardless of your faith. Diversity is our strength #WelcomeToCanada" (Trudeau, 2017). During Bissonnette's interrogation, he stated, "I was convinced they [Muslims] were going to kill my parents, my family. I had to do something" (Montreal Gazette, 2018). From Bissonnette's statement of "I had to do something," it would appear his behavior was not aligned with his TFBs (i.e., suppressed behavior not to attack immigrants), and by his own admission, there was a trigger point when he could no longer tolerate this inaction. I suggest this inaction led to an incongruence between his TFBs and behavior, and this led to violent extremist actions to "alleviate" the self-proclaimed misalignment, highlighting the suppression x incongruence combination.

Figure 2.2

Suppression-Incongruence Model of Extremism

¹ These processes are bidirectional and can as easily be applied to the process of disengaging from violence (sometimes referred to as deradicalization). Moreover, any part of the system may be in misalignment and be suppressed (i.e., the suppression of TFBs, emotions, or behaviors, or all). For the purposes of this thesis, however, the focus is on the adoption of extremism rather than disengagement from it.



2.8.1 Pathways to Extremism in the Suppression-Incongruence Model of Extremism

Above I have discussed the suppression x incongruence lens. Now I will outline the different pathways to extremism in my model. In my model, there are two possible outcomes when individuals experience a rebound effect: prosocial (redirection) and antisocial (more extremist ideology or behavior).

2.3.1.1 Prosocial Route. First, if individuals are able to express their true authentic selves, it can alleviate the suppression/incongruence. When individuals are able to express themselves in prosocial ways, for example, starting petitions, they are, at least temporarily, able to become congruent and restore the feeling of authenticity and homeostasis. This dissipates the incongruence, eliminating the need for suppression. This would see less extremism/radicalization, as the incongruence and motivation to alleviate it dissipate. It does not mean though that the individual stops being aware of the suppression/incongruence, but that the outlet allows them to be authentic for the time being. To return to the boiling pot analogy from earlier in this chapter, the prosocial path is akin to lifting the lid off the pot to let out some of the steam, thereby releasing some of the pressure to keep it from boiling over.

2.3.1.2 Antisocial Route. The second outcome of rebound effects is the antisocial route whereby individuals adopt or support extreme ideology or violent extremism. If individuals need

to continue to suppress, it could lead to more radicalized TFBs, emotions, or behaviors in order to attempt to dissipate the incongruence. By trying to suppress to cope, the incongruence becomes hyperaccessible or the suppression becomes too taxing and can no longer be maintained. This leads to rebound effects and adoption of more extreme cognitions or behaviors in an attempt to create congruence. For instance, if an individual suppresses their proclivity to behave aggressively, they may seek out situations that allow them to act aggressively as a “release,” such as participating in a violent mob at a soccer match or picking fights in a pub. If we think back to the real-world examples given at the beginning of this thesis, it is theoretically possible Ilse Koch and “John Wayne” were on this route; they brought something to the situation and released when it was perceived as “acceptable” (see Proclivity for Antisociality below for more discussion).

As previously discussed, however, a state of incongruence can lead to suppression and suppression can lead to incongruence. Thus, on this pathway, it is also possible for incongruence to stem from being forced to act in a way that is incongruent with one’s authentic TFBs (e.g., being a pacifist but being conscripted onto the frontlines of a war). This would also lead to more radicalization, as an individual would need to either suppress their authentic TFB and/or emotions, which would subsequently lead to rebound effects, or they need to alter their TFBs and emotions to align with their extremism, ultimately resulting in violent radicalization. Therefore, the bidirectional nature of the suppression and incongruence interaction could lead to both more radicalization/extremism albeit in unique ways. In terms of the pot analogy, the antisocial pathway is when the pressure becomes too much, the lid can no longer contain it, and it explodes and boils over.

2.3.1.3 Initially Prosocial. There is also a route where initially an individual uses the motivation to rectify the incongruence in a prosocial manner, but this later fails to alleviate the incongruence. If the prosocial route was unsuccessful in achieving change either subjectively or objectively, the individual would then again be in a state of incongruence. This would leave them with three options: partake in a different prosocial action, become more drastic but still in a more prosocial way, or become more radical to try to achieve change but in an antisocial way. For example, a person is discriminated against but is unable to change the discriminatory attitude; therefore, internal stress develops without a suitable outlet. As they experience and witness more discrimination, the internal stress from not being able to change their situation builds. They may

join a political activist group of like-minded individuals that work towards ending the discrimination they experienced. This allows them to redirect the internal stress into something productive while also alleviating some pressure. However, if the activist group is not effective at bringing about change (or enacting change fast enough), and their efforts are perceived to have failed, the internal stress begins to build again. Then without another outlet, the internal stress and pressure become too much to contain, and they react in a stronger, more extreme way, such as joining an intentionally violent protest. This route has more interplay between suppression and incongruence. This route would be similar to removing the lid off the pot, but then putting the lid back on and back and forth in attempts to dissipate the pressure. However, if the pressure keeps building, it will boil over.

There are two individual differences that can influence an individual's path and speed to radicalization and/or violent extremism: proclivity for antisociality and sensitivity to incongruence.

2.3.1.4 Proclivity for Antisociality. While I have discussed incongruence and suppression and how they can be in perpetual interplay to lead to more extremism, an aspect that has the potential to accelerate that process is dispositional traits. An example of such dispositional traits could be the Dark Tetrad—Machiavellianism, narcissism, subclinical psychopathy, and sadism (these dispositional traits are discussed in greater detail in Chapters 7 and 8). I suggest that individuals higher on these dispositional traits suppress the traits to varying degrees of success in daily life, but when they are confronted with the “right” opportunity to express their authentic TFBs, emotions, and behaviors, they do so. In terms of my model, I propose that in daily life individuals high on these traits are forced to suppress them due to societal or legal constraints among other reasons, leading to a perpetual state of incongruence. This means under the right situational context, the individual could be more prone to relent the suppression, releasing their natural propensities to alleviate the incongruence. As individuals higher on these dispositional traits regularly suppress their behavior from a theoretical perspective, creating an incongruence with their authentic TFBs, I argue they could have more vulnerability to radicalize more quickly and more extremely. Since individuals higher on these dispositional traits express themselves in maladaptive (i.e., aggressive) ways, expression leads to more radical actions/views, unlike others where prosocial expression leads to less radicalization.

2.3.1.5 Sensitivity to Incongruence. One facet that could influence individuals' pathways to extremism is how much incongruence they can tolerate. Sensitivity to incongruence could determine not only if someone will radicalize but also the speed with which they radicalize. I postulate that it is possible for people to radicalize with behavioral and emotional suppression with limited or no situational influences if they are highly sensitive to incongruence. This sensitivity to incongruence could additionally explicate how some individuals are able to resist and show less susceptibility to external cues that misalign with one's authentic TFBs or emotions; they can successfully tolerate higher levels of incongruence and for longer periods of time. Sensitivity to incongruence could be due to dispositional characteristics (e.g., the dark personalities), cognitive flexibility (e.g., critical thinking), or resilience to situational influences (e.g., a stronger sense of self), to name a few.

2.3.1.6 Summary. It is important to keep a few points in mind about my model. First, while it is pictorially linear, the process is not. The paths an individual can take are dependent on a multitude of cognitive, dispositional, and behavioral factors that perpetually interplay with external cues and vice versa. Second, the pathways are not mutually exclusive and exhaustive; there could be considerable overlap between them. In summary, the main aspects of my model are: (1) There are several pathways to extremism, and each person has their own individual starting points and route to extremism. (2) Predispositions can emerge or be suppressed, depending on which situational cues promote or discourage them within a large (e.g., country) or small (e.g., terrorist cell, gang) group. (3) Those with certain predispositions will stop suppressing them by either seeking out opportunities to express their true TFB or behave in accordance to their TFB once an opportunity presents itself. (4) Those who are highly sensitive to incongruence may be more likely to become extremist to alleviate that incongruence. (5) My model allows pathways to extremism that incorporate group- and individual-level variables. (6) My model framework can be used for earlier interventions, not a risk assessment tool. (7) Interventions could be community focused and be conducted pre-emptively to build resilience and coping mechanisms that steer individuals towards prosocial outlets. Next, I will discuss how my model is situated in the broader extremism theoretical literature.

2.9 Situating the Suppression-Incongruence Model of Extremism with Extant Theories

While I recognize there is no panacea for extremism models, I believe mine contributes a more holistic, pre-emptive, and dynamic approach to understanding the extremism process that

adds to and complements the numerous other extant models and theories that explain aspects of the extremism process from various angles. Emotional regulation/GAM relates to my model in terms of the over-regulation leading to aggression. This over-regulation of emotions, or suppression, is encompassed in my model where it leads to an incongruence, which in turn leads to rebound effects that result in more (support of) extremist behavior. SCT relates to my model in that this interplay between observations (external cues) and TFBs creates an alignment and a congruence over time, suggesting that if one were to observe extremist behavior, they would be more likely to align their TFBs with these observations. Additionally, cognitive maps could theoretically create this cognitive rigidity particularly in those who have a proclivity for antisociality, leading to more extremist cognitions or behavior. For NIH, when an individual is faced with a crisis or crises, they need to either suppress their TFBs or behavior or alter them to align with the way they see the world after a crisis to reduce the incongruence. As a result of these, there would be rebounds towards more extremism according to my model.

Coercive radicalization theory explains how external cues (i.e., indoctrination) through very regimented cognitive and behavioral control from others alters one's TFBs and/or emotions to align with the ideology. In terms of how this relates to my model, coercive radicalization theorizes how one suppresses their TFBs to the indoctrination to reach a congruent state. While the antisocial route in my model may seem similar to GST, I argue it is not the strains themselves that urge people to radicalize, rather it is the sensitivity to the incongruence that pushes them into action to resolve the inner turmoil. For example, a person may feel one strain or a multitude of strains, but if they can tolerate the incongruence between their TFBs, emotions, behaviors, and external influences or express them in a prosocial manner, they may not support or engage in violent extremism.

SMT, network theory, and the French sociological perspective of extremism have similar connections to my model. All theorize different aspects of continual suppression and incongruence between TFBs and emotions that lead to seeking out of more extreme groups that align with these TFBs and emotions. Once individuals join these extreme groups, they become congruent, resulting in more extremism. In terms of my model, role identity and obedience to authority are similar in that they both require suppression of one's authentic TFBs to align with the expected behavior. Both theories also allow for predispositions, such as proclivity for antisociality, to be released, decreasing the suppressed behavior outside of that scenario (e.g.,

“John Wayne”). Finally, frustration-aggression theory is similar to my “initially prosocial” pathway, which leads to the antisocial route if the initially prosocial actions fail to bring about perceived change, leading to more incongruence and subsequently more extremism.

2.10 Chapter Summary

I developed a model that expands upon the psychological theories, mainly suppression and incongruence theories, and amalgamates other theories in extremism research, such as GST (collective strains or stressors are experienced) or coercive radicalization (indoctrination learned through assimilation through controlled behavioral regimens). Ironic theory suggests that the more an individual tries to suppress a TFB, the more likely they are to create a hyperawareness of it, while limited resource model indicates one’s finite resources get depleted from suppression. Both lead to rebound effects. I postulate that suppression and/or a feeling of incongruence creates internal motivation to rectify it. In terms of extremism, this internal motivation could take either a pro- or antisocial outlet (e.g., lobbying for policy changes versus financially supporting an extremist group) in an attempt to alleviate the incongruence. Thus, I suggest with my model that suppression and/or incongruence leads to more radicalization (cognitions) or (support of) extremist behavior. While my model could be extrapolated into different areas of research, for this thesis, I will exclusively focus on its application to the different pathways to support extremism.

My model for the extremism process aims to fill the gaps in the literature by: (1) explicating how cognitive, dispositional, *and* behavioral factors in perpetual interplay can predict individuals holding/adapting to more extremist views or bystander support for extremist behavior; (2) recognizing individualized pathways to extremism, which can be internally or externally motivated/influenced by individual differences not examined previously; and (3) going beyond extant models/theories to explain how suppression x incongruence could lead to (support of) extremism. It is intended that the conceptual work presented here will also guide research and ultimately future interventions to decrease the susceptibility to extremism pre-emptively through community prevention programs, but this aspect is beyond the scope of this thesis.

Chapter 3

3.0 Introduction to the Empirical Studies

This chapter presents an overview of the four empirical studies for this thesis. I will discuss the aims and research questions of each study and then how each study examines different aspects of the suppression-incongruence model of extremism. The theoretical bases for each study are explained in Chapters 5 – 8 in detail. The theories behind each empirical study are extensive and diverse, and as such, are not discussed in this chapter.

3.1 The Empirical Studies

3.1.1 Study 1

In terms of the suppression-incongruence model, Study 1 (Chapter 5) is designed to examine bystander support for an objectively extreme amoral act (i.e., hacking) and how individual's moral connectedness to the different actors predicts more bystander support for extremism. This study allows me to analyze how judgments of morality could predict more bystander support for extreme behavior.

The context of the study is non-violent eco-hacktivism by a non-state group and individual differences of morality judgment of actors in the vignette. The three actors in the hacktivism vignette are: the hacktivists, the hacktivists' spokesperson, and a supportive social media commentator. The individual differences that are focused on in Study 1 are morality, moral connectedness to the actors, and pre-existing beliefs about the cause (the importance about the environment). Morality and moral connectedness to the actors is assessed through two scales that are developed for this study. These concepts are defined and operationalized in Chapter 5.

3.1.2 Study 2

In terms of the suppression-incongruence model, Study 2 (Chapter 6) allows me to investigate if suppression and (in)congruence lead to more or less extreme rebound effects. For suppression (hypothesized to cause a state of incongruence), it investigates how suppressing TFBs leads to more extremism (more rebound effects). For congruence (hypothesized that a congruent state comes from expressing oneself), it investigates how expressing one's TFBs leads to less extremism (fewer rebound effects). The expression condition is included to create a potential prosocial route or outlet for participants in accordance with the suppression-incongruence model.

This study investigates objective and subjective rebound effects after participants read the same eco-hacktivism vignette from Study 1. The objective rebound measure is an increase in intrusive thoughts (i.e., unwanted or the thoughts trying to be suppressed) and are measured during an unrelated task (word search). The subjective measure is an increase in negative affect and/or a decrease in positive affect and is measured by affect changes before and after reading the article. Participants are randomly assigned to suppression or expression conditions (or no instructions for a control group comparison).

3.1.3 Study 3

Study 3 (Chapter 7) investigates behavioral suppression, sensitivity to incongruence, and individual differences (the Dark Tetrad). These aspects of my model are investigated as those higher on the Dark Tetrad are more likely to suppress their behavior until triggered, have an inclination for dogmatic responses to specific triggers, and have been shown to have an increased proclivity for supporting aggression. These aspects could impact those higher on these dispositional traits to indicate more bystander support for extremist behavior (state-sponsored extremism [SSE]).

This study investigates bystander support for various real-world examples of SSE. They include non-violent and violent SSE, financially supporting SSE, and governmental policies that could instigate SSE. In addition to suppression, I investigate dispositional traits (the Dark Tetrad and right-wing authoritarianism) that have a theoretical underpinning of suppressing antisocial proclivities to function within societal norms compared to their clinical counterparts to predict their sympathies towards SSE.

3.1.4 Study 4

In terms of the suppression-incongruence model, Study 4 (Chapter 8) investigates cognitive suppression, sensitivity to incongruence through cognitive rigidity, and proclivity for antisociality according to my model. The suppression and proclivity for antisociality are investigated similarly to Study 3 with the dark personalities. However, cognitive flexibility is a new element in this study. Cognitive flexibility allows individuals to adjust or adapt to new situations or information more easily, theoretically decreasing incongruence, which in turn could be a protective factor against more extreme cognitions.

This study investigates predictors for the proclivity for more extreme cognitions (i.e., conspiracy mentality). I include dispositional traits (Dark Tetrad, right-wing authoritarianism,

and collective narcissism) and traits (suppression, critical thinking, and sense of self). These dispositional traits and traits have the theoretical underpinning to either increase or decrease cognitive flexibility, predicting more or less extreme cognitions, respectively.

3.2 Overall Chapter Conclusions

The four empirical studies that are conducted for this thesis examine different facets of the suppression-incongruence model of extremism. Overall, two investigate cognitive aspects (Studies 2 and 4) and two (Studies 1 and 3) investigate behavioral sympathies for varying forms of extremism. The three forms of extremism are: eco-hacktivism, SSE, and proclivity for extreme cognitions. As there were COVID-19 and public health guideline impacts on this thesis (see Chapters 6 and 9 for more discussion on these impacts), the studies are lateral rather than hierarchical. Taken together, the four studies investigate suppression, incongruence, and individual differences to examine the overarching question of this thesis: does suppression x incongruence predict more extremism?

Chapter 4

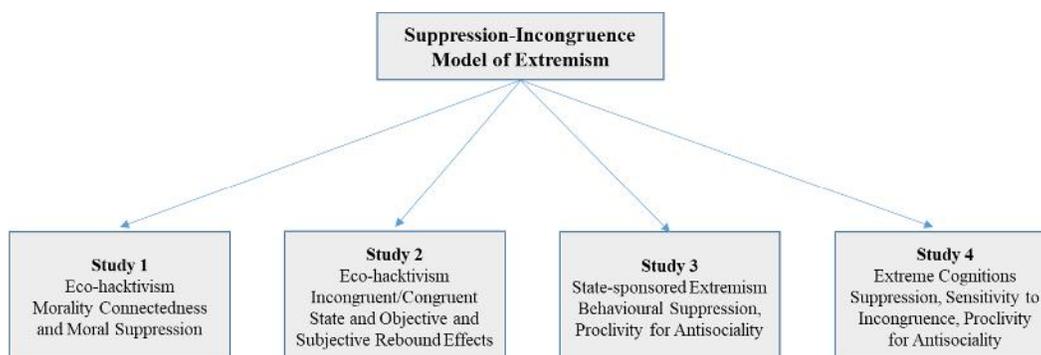
4.0 Methods

As mentioned previously, this thesis will investigate the suppression-incongruence model of extremism through four studies (one true experiment and three cross-sectional studies). The model development (see Chapter 2) established a framework that complemented and expanded on extant theories. I have, therefore, created a model that explores the earlier stages of when people begin to develop or show more extremist TFBs or sympathies and to investigate what conditions and dispositional traits might influence the development of extremism. The literature review and development of the new framework's purpose was twofold: to contribute a theoretical model that accounts for the cognitive, dispositional, and behavioral aspects of the extremism process and to indicate how this framework can drive new research, especially towards building resilience and limiting susceptibility to extremism.

For the thesis, I have focused on three under-researched forms of extremism: eco-hackivism by a non-governmental organization, various real-world examples of SSE, and proclivity for more extreme cognitions (i.e., conspiracy mentality). See Figure 4.1 for the four studies. Each of the studies presents a detailed methodology section within their respective chapters (Chapter 5 – 8). Thus, this section presents a brief overarching overview of the methodology of the empirical studies related to the rationale, aims, protocols, and sample size. I then discuss methodological concerns with experimental and cross-sectional research in this field in particular threats to validity and reliability followed by a brief discussion on the impact of the COVID pandemic on the thesis.

Figure 4.1

Flowchart of Empirical Studies



4.1 Study 1: The Morality behind Supporting Crowdfunding Campaigns for Eco-hacktivists

Study 1 examines the perceived morality and bystander support for three actors (hacktivists themselves, their spokesperson, and a supportive social media commentator) in an eco-hacktivism vignette and how these facets could predict a willingness to donate to the cause. In addition, I investigate how one's pre-existing beliefs towards environmental concerns would impact their willingness to donate to the hackers' cause. All measures and questions related to this study can be found in Chapter 5. See Figure 4.2 for the protocol. See Appendix A.5 for the participant exposure materials.

4.1.1 Rationale behind Investigating Hacktivists and Crowdfunding for Their Cause

Hacktivism is a unique form of extremism where it often in part has a prosocial element to try to bring about positive societal change or attention to an area (e.g., exposing environmental polluters) even though the act of hacking objectively is amoral. Researching hacktivism presents a unique opportunity to examine an objective extremist behavior that many may feel is at least partly beneficial to society. There is a lack of empirical research in this area especially in researching other participants who support the hackers.

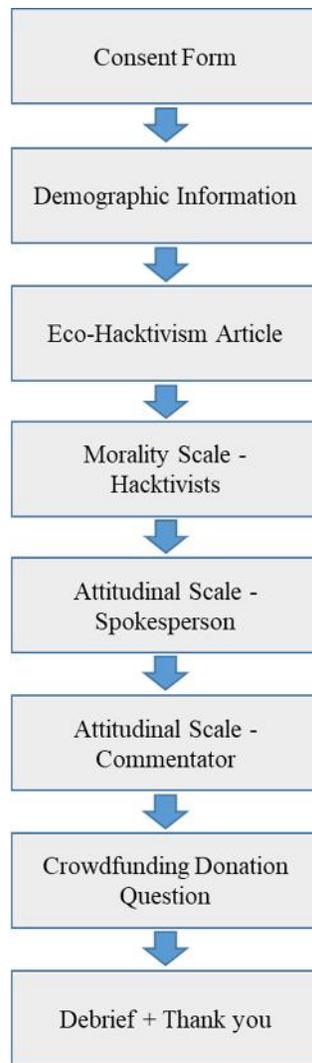
I want to examine the willingness to donate to a cause that objectively should be viewed as illegal, amoral, and extreme. However, I argue when people feel morally connected to the actors and those who support them, they will be more willing to support the cause financially. In terms of my model, this study is investigating how pre-existing beliefs and moral connectedness to extremist actors predicts a more willingness to support extremist behavior.

4.1.2 Overall Aims of Study 1 – Morality and Hacktivism

There were two main aims for this study: (1) to what extent would participants be willing to support hacktivism based on their pre-existing beliefs about the environmental importance of clean waters and (2) which and to what extent would different facets of morality predict the willingness to donate to a crowdfunding campaign to support the hackers.

Figure 4.2

Protocol for Study 1



4.1.3 Power Analysis for Study 1

I ran an a priori power analysis using G*Power version 3.1.9.4 (Erdfelder et al., 1996) to estimate the sample size that would be required. I used G*Power's *F*-test for linear multiple regression fixed model with R^2 increase with a set small effect size (.10), power set at .95, and probability at .05 for a conservative approach. As I had created the morality scales for this study, they were not validated, and thus, I did not definitively know how many predictors would be in the regression model. I estimated 10 potential predictors (the final regression model had nine predictors). Based on G*Power's calculation, I needed a total of 254 participants. However, on the practical side, having below 350 participants for correlational studies can make it challenging

to publish the findings in peer-reviewed journals. Thus, I aimed to recruit a minimum of 350 participants to satisfy both the statistical and publishing minimums.

4.2 Study 2: Does Suppressing or Expressing Yourself Have Negative Impacts?

Study 2 is an experimental design with participants randomly assigned to one of three conditions (suppression, expression, or no instruction as a control). I examine if being asked to suppress or express one's TFBs while reading the hacktivism vignette from Study 1 will impact the number of intrusive thoughts or affect changes (i.e., rebound effect). I measure the rebound effect both objectively and subjectively as this allows me to go beyond merely counting the number of intrusive thoughts and look specifically at changes in affect state. The objective measure is a count of the number of times a TFB enters the participants' minds. The subjective measure is a pre- and post-measure of positive and negative affect. All measures and questions related to this study can be found in Chapter 6. See Figures 4.3 and 4.4 for the protocol. See Appendix B.3 – B.5 for the participant exposure materials.

4.2.1 Rationale behind Investigating Suppression and Expression while Reading a Hacktivism Article

Suppression and its impacts are well established in the extant literature. Theoretically the opposite of suppression is expression, and there is very little research on if expressing one's true self can have positive effects and a decrease of intrusive thoughts (i.e., removing any rebound effects). Neither suppression nor expression influences have been investigated in terms of the potential impact of not being allowed to be yourself versus being asked to actively "release" your authentic self and how much an individual demonstrates bystander support for extremist behavior. Study 2 tests the first aspect to investigate if being asked to suppress TFBs about a hacktivism article leads to a rebound effect. If there is an increase in intrusive thoughts or increase in negative affect in the suppression condition, then I can surmise there was a rebound effect, and then I can use this paradigm with the morality scales from Study 1 to examine to what extent being in an incongruent state (i.e., being asked to suppress) influences bystander support for extremism.² In terms of my model, this study is examining how being asked to suppress can lead to more extreme affect or affective shifts and intrusive thoughts. Conversely, I am also

² Study 2 was impacted by the public health guidelines for COVID-19, as such, I had to move this study to an online format and subsequently altered my plans for Study 3 and 4 as I discuss at the end of this chapter and the Limitations' section in Chapter 9.

exploring if being allowed to express one's true self (i.e., venting as a prosocial like outlet) dissipates the occurrence of unwanted, intrusive TFBs and negative affect.

4.2.2 Overall Aims of Study 2

The overall aim of Study 2 is to determine if asking participants to suppress, express, or no instructions on TFBs about the hacktivism article will create objective and/or subjective rebound effects (an actual increase in the TFBs they are trying to suppress). As one of the ways of measuring rebound effects is to assess subjective affective changes (pre and post), a pilot study is needed. In the pilot, the aim is to generate a list of words that evoke the least amount of emotional reactivity to minimize the words' influence on participants' affective states when used in the word search in the full study.

Figure 4.3

Piloting of Word Search Words (Study 2) Protocol

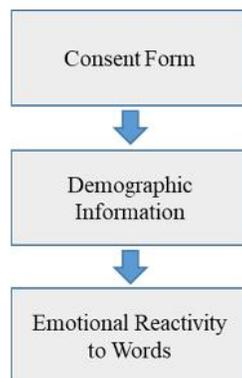
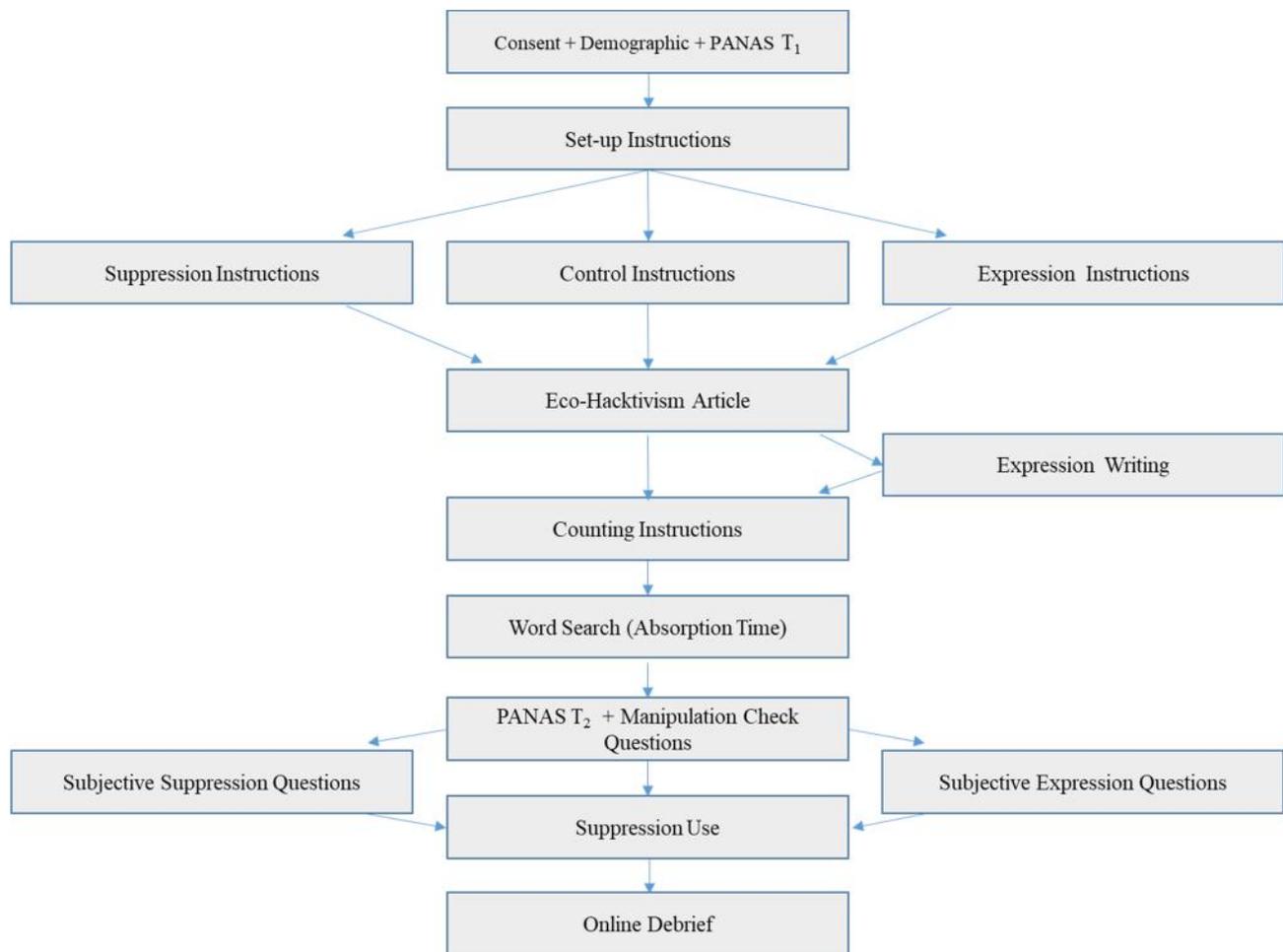


Figure 4.4

Protocol for Study 2



4.2.3 Power Analysis for Study 2

I used G*Power version 3.1.9.4 (Erdfelder et al., 1996) for my a priori power analysis to estimate the sample size. For this study, I intended to run a multivariate analysis of covariance (MANCOVA) repeated measures and investigate within/between interactions with three conditions. Thus, I selected *F*-test in G*Power with the power set for a small effect size of .25, power set at .80, and probability at .05, as is recommended (Tabachnick & Fidell, 2013). Based on these parameters, G*Power calculated that I would need 158 participants, with approximately 52 participants per condition.

4.3 Study 3: Methods Dark Personalities and Their Sympathies towards State-sponsored Extremism

Study 3 examines how participants who are higher on the dark personalities (Machiavellianism, narcissism, psychopathy, sadism, and right-wing authoritarianism) show

bystander support for four real-world examples of SSE in a cross-sectional study. The examples I use range from policies which target a marginalized group within a country to violent physical state-sponsored extremism. I also examine suppression use to see its impact on bystander support for SSE. All measures and questions related to this study can be found in Chapter 7. See Figure 4.5 for the protocol. See Appendix C.2 for the participant exposure materials.

4.3.1 Rationale for Examining the Dark Personalities and State-Sponsored Extremism

Support

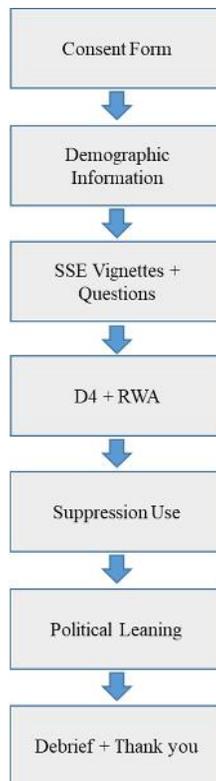
There is very little research on SSE compared to other areas of extremism, such as Islamic State extremism, and even less quantitative research (Fetcher, 2018; Pickard et al., 2020). SSE can come in many forms, and historically, there are usually incremental changes in policies which provoke increased aggression and/or isolation long before physical violence is endorsed by a state. I aim to examine this gamut to provide a more nuanced understanding of the varying forms of SSE and the support they garner from bystanders. Therefore, studying four current real-world examples will allow me to develop statistical predictive models for susceptibilities towards endorsing SSE. In terms of my model, this study is examining if suppression through dogmatic responses of the dark personalities or cognitions will influence the willingness to support extremist behavior.

4.3.2 Overall Aims of Study 3

There were two main aims for Study 3: to determine (1) which and to what extent the dark personalities predict bystander support for SSE and (2) to what extent suppression use and political alignment predict bystander support for SSE.

Figure 4.5

Protocol for Study 3



4.3.3 Power Analysis for Study 3

The a priori power analysis was conducted on G*Power version 3.1.9.4 (Erdfelder et al., 1996). As with Study 1, I planned to use multiple linear regression for the analyses. Thus, I selected G*Power's *F*-test linear multiple regression fixed model with R^2 increase. The models would have 11 predictors. The dependent variables were those I had created along with the vignettes, thus, I again took a conservative approach and set a small effect size of .10 with probability at .05 and power at .95. Based on these parameters, G*Power calculated I needed 262 participants. Again however, the aim was to include a minimum of 350 participants to meet the general minimum standard for peer-reviewed publications.

4.4 Study 4: Cognitive Rigidity: A Predictive Model of Conspiratorial Mentality

In the final study of this thesis, I investigate traits known to increase or decrease cognitive rigidity and dispositional traits that theoretically either increase or decrease cognitive flexibility and how that could predict conspiracy mentality (i.e., extreme cognition). The traits I include are critical thinking, sense of self, and suppression, and the dispositional traits are the Dark Tetrad, RWA, and collective narcissism. While many of the traits known to increase or decrease

cognitive rigidity and dispositional traits have been examined previously for their associations to proclivity for extreme cognitions, they have not been included in one single model. Therefore, I will conduct a full measurement assessment with both an exploratory and a confirmatory factor analysis before running the causal model. All measures and questions related to this study can be found in Chapter 8. See Figure 4.6 for the protocol. See Appendix D.1 for the participant exposure materials.

4.4.1 Rationale for Investigating Conspiracy Mentality Predictors

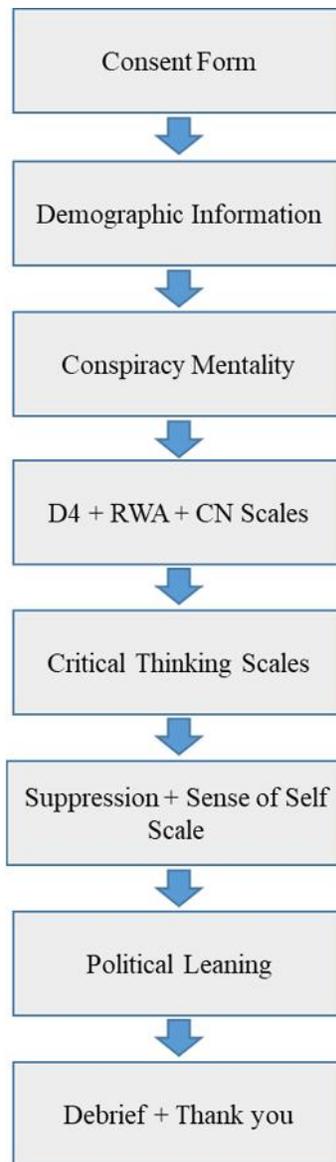
In order for people to engage in extremist behavior, they must first develop extremist beliefs. For some, this may be a protracted process while for others it can be rapid. In Studies 1 and 3, I look at bystander support for extremist behavior, and in Study 4 I investigate participants' susceptibility for more extreme cognitions. Investigating specific conspiracies and/or extreme cognitions about specific events can limit generalization because specific conspiracy theories often have their own contextual predictors and temporal constraints. Thus, I chose to investigate conspiracy mentality (a proclivity to think in conspiratorial terms), as it is a more stable individual difference that better allows for generalization. Conspiracy mentality can also be viewed as a susceptibility towards more extreme cognitions. I also look at dispositional traits and traits known to increase or decrease cognitive rigidity that can either increase or decrease proneness towards having a conspiracy mentality, termed rigidity in this study. In terms of my model, this study is investigating how suppression, and cognitive rigidity predict a proclivity for more extreme mind set.

4.4.2 Overall Aims of Study 4

The main aim of Study 4 is to develop a predictive model of conspiracy mentality (i.e., extreme cognitions) to determine if cognitive rigidity through individual differences on traits (critical thinking, sense of self, and suppression) and the dark personalities could predict more support for a proclivity for extreme cognitions (i.e., conspiracy mentality). I additionally aim to understand if and how the traits known to increase or decrease cognitive rigidity moderate the relationship between the dispositional traits and conspiracy mentality.

Figure 4.6

Protocol for Study 4



4.4.3 Power Analysis for Study 4

In the literature on adequately powering an EFA, CFA, and SEM, there are wide ranges of recommendations, from five to 20 participants per factor to a minimum of 500 regardless of the number of factors (Tabachnick & Fidell, 2013). Smaller sample sizes in such analyses can lead to poorer or ambiguous factor loadings and Type II errors (Kline, 2015). The general consensus is larger is often better, especially in CFAs. While I used validated scales in my study, they had not previously been used together in one model, creating a challenge to know how many factors would emerge in order to estimate the participant-to-factor ratio a priori as is often recommended (MacCallum et al., 1999). I further estimated that approximately 5% of those who completed the

questionnaire would need to be removed from the analysis for varying reasons (e.g., multivariate outliers). Thus, I aimed to recruit more participants than calculated to ensure that enough participants were retained for proper power after the data had been cleaned. Based on these factors and researchers' recommendations, I determined I needed approximately $N = 525$ for the EFA and $N = 680$ for the CFA. I used both the EFA and CFA samples in the SEM as a more conservative approach because only using the CFA participants in the SEM could lead to a better model fit and overestimated effect sizes (Tabachnick & Fidell, 2013).

4.5 Methodological Challenges and COVID-19 Impact

Another methodological challenge in researching extremism revolves around external validity. There are very few studies, such as Lindén and colleagues (2019), that actually investigate violent extremism in beliefs and behavior in real situations like military deployment quantitatively. While this relates to both the sensitivity of the topic and the ethical constraints in this field, it also raises concerns regarding generalizability to assess real-life extremism rather than attitudes of perpetration. Qualitative data in the field have analyzed former individuals who have engaged in violent extremism in an attempt to extrapolate their pathways to risk factors (Corner et al., 2021). However, this can lead to an over-extrapolation of risk factors.

Lastly, studying aggression and extremist behavior also presents ethical methodological challenges. It is not possible to experimentally manipulate participants into behaving aggressively or adopting extremist ideology that directly maps onto what occurs outside of research. Therefore, I am investigating bystander support for extremist behavior, such as hacktivism and state-sponsored extremism, and proclivities for more extreme cognitions, such as conspiracy mentality. Throughout this thesis, it is important to note that bystander support for extremist behavior and proclivities for more extreme cognitions do not equate with engaging in violent extremism. Many who are more willing to support violent extremist acts within research would not necessarily engage in that violent extremist act themselves. However, some of the most extreme behavior results from bottom-up (i.e., civilian led or initiated) acts, whereby "ordinary" citizens violently attack an outgroup. I would further argue that, without bystander support and general acceptance of extremist behavior and ideology, extremist actions and even policies would simply not be as effective in their implementation. Thus, investigating the willingness to support does capture aspects of bystanders in real-world acts of extremism. For extremism, and terrorism in particular, research often focuses on anecdotal evidence from

individuals who either supported or were involved with violent extremism (Fetcher, 2018). As such, it is important to also go beyond anecdotal evidence and collect larger samples from bystanders.

4.5.1 COVID-19 Challenges

COVID-19 and the governmental restrictions that resulted in lockdowns that effectively shut down society created further methodological challenges for this thesis. The initial thesis design and plan had been to build and scaffold the experiments based on Study 1 and Study 2. However, due to repeated lockdowns, which prevented studies being run in the laboratory, the thesis plan needed to be altered substantially. Study 1 and the pilot of Study 2 were not impacted by these public health measures. However, Studies 2, 3, and 4 could not be conducted as initially designed: Study 2 was adapted to be conducted online, which required a total redesign of the study to be viable in an online format (e.g., altering the instructions, tasks, and measurements of the dependent variables). Studies 3 and 4, which were initially designed to be controlled experiments, were redesigned as online cross-sectional studies to facilitate their completion and enable testing of aspects of my model while adhering to the government mandates and public health guidelines in place at the time. The impact of these changes is discussed in greater detail in the Limitations' section in Chapter 9.

Chapter 5

5.0 Study 1: The Morality behind Supporting Crowdfunding Campaigns for Eco-Hactivists

Submitted to *Social Science Computer Review*

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5.1 Abstract

Hactivism, the use of cyber-attacks for a social or political agenda, is becoming increasingly more common. This study investigates if specific aspects of morality and subjective bystander support for non-violent eco-hactivism predicts a willingness to donate to a crowdfunding campaign.

A total of 350 participants responded to our online cross-sectional study. To ensure the dimensionality of our morality components, we ran three principle component analyses (one for each actor playing different roles in the hactivism vignette) prior to running our regression model. Our regression model explained 41% of the variance in the willingness to donate to a crowdfunding campaign for the hactivists with being younger and higher moral-altruistic beliefs of the hackers, moral-social connectivity to the spokesperson for the hackers, and moral behavioral intention with the social media commentator being significant predictors. This suggests that different perceived morality towards varying actors may better predict bystander support for hactivism than others and that pre-existing beliefs influence moral connectedness to the actors. This indicates that individuals suppress objective morality to align with their pre-existing beliefs on a topic.

Keywords: hactivism, morality, non-violent extremism, online crowdfunding, moral disengagement

5.2 Introduction

With the Russian invasion into Ukraine, Anonymous, a decentralized collective of cyber-experts who are known for hacking for political purposes (i.e., hacktivists/hacktivism) launched a concerted cyber-attack on Russian news stations and governmental websites (Tidy, 2022). These cyber-hacks and interferences effectively shut down numerous pro-Russian sites. Nearly 300,000 accounts liked and supported the Anonymous tweet that announced that they had conducted the cyber-attack (AnonymousTV, 2022). The actions were widely viewed as acceptable in the West but were condemned by the Russian authorities.

The financial cost of cyber-crime is staggering, as there are direct (e.g., ransomware) and indirect costs (e.g., cyber-security countermeasures; Armin et al., 2016; Anderson et al., 2013). In 2021, cyber-crime was projected to cost US\$6 trillion globally with ransomware costing approximately US\$20 billion of that (Morgan, 2022). In terms of cyber-security, the costs were expected to exceed US\$1 trillion in just a five-year period between 2017-2021. This highlights the financial burden on societies and the need to understand cyber-extremism in all its forms to identify mitigation strategies.

This paper is concerned with hacktivism, a portmanteau of hacking and activism. While we argue that hacktivism and cyber-terrorism are forms of extremism, hacktivism and cyber-terrorism have unique characteristics and are not equivalent (PytlikZillig et al., 2015). Hacktivism and cyber-terrorism are both politically motivated, illegal/unauthorized access to computer or electronic systems (Eagan, 1996; PytlikZillig et al., 2015; Embar-Seddon, 2002). However, the main differences between hacktivism and cyber-terrorism stem from the motivation, or morality, behind the illegal/unauthorized access. Hacktivism promotes a political cause with no (threat of) violence or self-serving goals to draw attention to a cause (Denning, 2001, Eagan, 1996, PytlikZillig et al., 2015). Whereas, cyber-terrorism is intended to invoke fear through violence or the threat of violence often along with self-serving goals, such as financial gain (Beck, 2008; Embar-Seddon, 2002). Thus, this lack of attempting to initiate and spread fear is absent in hacktivism but present in cyber-terrorism. It is also imperative to recognize that the same act could be both perceived as hacktivism or cyber-terrorism depending on the individual's perspective, as with Anonymous' attack on Russian sites. For this reason, it is crucial to investigate individuals' moral perceptions towards different actors involved in extremist behavior.

For the current study, we chose to examine eco-hackivism, the use of non-violent, cyber actions to promote environmental causes or protections (inspired by Eagan, 1996). In recent years, environmental reports on the quantity of plastics and micro-plastics in the world's waters has raised alarms with environmentalists and individuals (Guzzetti et al., 2018; Walker & Xanthos, 2018). We wanted to investigate bystander support for a type of prosocial unethical behavior (i.e., eco-hackivism) on a salient topic, which is why we chose to focus on a corporation dumping plastics into shared waters. The term prosocial unethical behavior seems paradoxical; however, the intent and motivations behind supporting or participating in eco-hackivism are meant to protect the environment (i.e., the prosocial) while at the same time the actions to achieve these goals are still unethical or illegal if viewed objectively. Thus, this is one of the overall aims of the current paper: to what extent would participants be more willing to support hackivism if it aligned with their pre-existing beliefs on environmental issues?

5.2.1 How Morality Can Shape Our Perceptions about Unethical Behavior

According to social cognitive theory, morality is created through an adopted form of a learned sense of right and wrong rather than objective moral logic (Bandura, 1991). This sense of right and wrong then becomes an individual's moral standard that influences their behavior through anticipatory, proactive self-regulation to avoid behaving inconsistently with these standards. For example, the act of hacking is objectively amoral; however, motivations to help people or the environment through hacking could subjectively be perceived as moral. There is also evidence to suggest that morality or moral reasoning comes from separate cognitive processes where there are objective and subjective differences in morality (Prehn et al., 2008; Lim et al., 2008). These separate processes highlight that we handle objective and subjective morality differently. For this study, we are exclusively focusing on subjective moral facets, particularly: moral subjectivism, cultural relativism, ethical trust, and virtue morality.

Moral subjectivism, also referred to as non-cognitivism, is an individual's personal moral standards (Monroe et al., 2018). "Do you think their behavior was right?" would be an example of moral subjectivism, where individuals are asked to give their perceptions of right and wrong. Cultural relativism, as we are defining it, is morally relating to a culture and its people who have been harmed. An example of this type of morality would be "do you think Irish people would support this?" We are operationalizing ethical trust as how individuals trust other's ethical standards or morality. Thus, "do you trust their motives?" would exemplify this facet of

morality. Lastly, we wanted to investigate virtue morality, which focuses on the traits or characteristics, rather than behavior, of another individual (Annas, 2006), with questions similar to “are they good people?” This is by no means an exclusive list of the types of morality; however, we believe these morality aspects may be more likely to predict support of different actors who were involved in separate components of unethical behavior in hacktivism, as we discuss more below.

5.2.2 Justifying Unethical Behavior

What enables individuals to assess behavior, objectively viewed as immoral and unethical, as moral and ethical? Some researchers have suggested that time pressure (Taylor, 2009) or taxed cognitive resources (Baumeister et al., 1998) could lead individuals to behave in ways that are inconsistent with their usual morality through the decreased capacity of deeper cognitive processing. However, moral disengagement, where an individual suppresses or disassociates from their usual “moral compass” to engage in unethical behavior without guilt, allows individuals to believe they have retained their moral standards in light of their unethical behavior or support for such behavior (Bandura et al., 1996). For instance, research has found that moral disengagement is associated with unethical behavior from organizational misconduct (Newman et al., 2020) to support for punitive war measures (Aquino et al., 2007) through a variety of cognitive mechanisms.

According to Bandura (1991, 2002), moral disengagement occurs through several cognitive mechanisms, such as displacement of responsibility or euphemistic labeling. These mechanisms then allow individuals to retain a positive self-image despite unethical behavior (Bandura, 2002; Moore, 2015). For instance, Bandura (2017) argued that people who retaliate after being victims of a terrorist attack can morally disengage by diminishing their own violence in comparison to the acts of which they were victims. Ultimately, individuals could validate their retaliatory violence by stating their violence was minor compared to the violence in the terrorist attack, thus morally disengaging from their own unethical behavior. While all the moral disengagement mechanisms vary in the rationale behind the disengagement, they all provide a way to disassociate from or suppress responsibility for the unethical behavior that the individual engaged in (see Moore, 2015 for a detailed overview). It would then be logical that if participants felt justified in their retaliation (i.e., vengeance against a bigger, more dangerous threat) to support the eco-hacktivism, the conditions are met for moral disengagement, thus participants

may demonstrate more bystander support for eco-hacktivists.

While moral disengagement is usually examined in studies that do not contain a prosocial aspect, our study focuses on potential perceived prosociality in support of hacktivists' actions to protect the environment. Ultimately, individuals could show a more willingness to support eco-hacktivism through a lens of perceived justified moral and/or social superiority. Little research has been done on this area. We argue that it could then follow that specific facets of morality for each actor could be better predictors than others and if the pre-existing beliefs towards taking action (in this case, to clean plastics from water supplies) would predict unethical behavior in terms of supporting eco-hacktivists.

5.2.3 Bystander support for Hacktivism

Hacktivism does not happen in a vacuum. Without some level of public support, hacktivists would likely fail in their objectives to affect change, and, as such, hacktivism would come to a natural end in time. Hacktivism is increasingly utilized for causes or political agendas, yet it is under-researched from a psychological and morality perspective. There are a few reasons to explain the increase in hacktivism (Thackray & McAlaney, 2018). Hacktivism can be carried out anywhere in the world; thus, proximity to a cause is no longer necessary. It is lower risk compared to in-person public protests, and there is an increase in the audience. Two main goals of hacktivism can be to leak information to draw public or governmental attention to their cause (e.g., WikiLeaks; Caldwell, 2015) to effect societal change (e.g., change environmental laws; Sorell, 2015). Thus, gaining public backing (macro level) and support from individuals (micro level) are crucial for either of those goals to be effective. One difficulty with researching this area is the grey area or fine line where hacktivism or other prosocial unethical behavior is deemed legitimate or morally correct (Galli, 2018). This causes challenges with assessing the morality of those who engage in and/or support these actions.

There is little research on non-state conducted violent eco-extremism and even less on non-state conducted non-violent eco-extremism that was carried out to defend the environment compared to acts of Islamic extremism (Fetcher, 2018; Pickard et al., 2020). As such, we wanted to investigate bystander support for non-violent eco-hacktivism that was perpetrated by a non-state organization. Much of the literature and research in regards to hacktivism focuses on the motivations, cognitive reasoning, and morality for the hackers who engage in the unethical behavior. For instance, Chng and colleagues (2022) found and described 13 types of hackers

with hacktivists' actions led by ideology, notoriety, or revenge, raising the question would those who support hacktivism share similar traits and motivations to those who actually do the hacking? Previous research that does look at bystander support of hacktivism has generally examined attitudes and perceptions towards the hacktivists only (Caldwell, 2015; Chng et al., 2022; Hadlington, 2018; Heering et al., 2020) and rarely their targets (PytlikZillig et al., 2015). New aspects in our research involve investigating participants' perceived morality towards three unique actors who are involved in the unethical behavior and the use of crowdfunding as a support mechanism. The actors we utilized in our vignette were: the hacktivists themselves, the hacktivists' spokesperson, and a social media commentator who demonstrated bystander support for the hacktivism. Each actor was included to examine different facets of morality and social influences. The hacktivists were presented in order to examine direct perceptions of the hacking and hackers. The spokesperson was utilized as an authority figure who justified the hacking and the most public facing figure of the hacktivists. The social media commentator was included to investigate a peer-like social influence from someone who was not directly involved in the hacking but could elicit support through online channels.

For the current study, we intended to investigate how, at a micro level, individuals could indicate a willingness to support such causes based on their perceived morality of the actors involved in the hacktivism and society's response to the hacktivism. An increasingly common form of prosocial behavior is crowdfunding. Crowdfunding is a fundraising method, which aims to raise money from a large amount of people to support a cause (i.e., bottom-up, micro-level activism), usually elicited online through social media sites. Our indirect, micro-level bystander support for eco-hacktivism was measured by the willingness to donate to an online crowdfunding campaign in support of the hacktivists' cause. Thus, if individuals have higher moral regard on different facets of morality for the actors and their actions, could different morality aspects predict more bystander support for the hacktivism?

5.3 Aims and Hypotheses

The aim of the current study was to investigate if different facets of morality and favorable attitudinal views of three actors in the vignette would predict a more willingness to donate to non-violent eco-hacktivism. Our hypotheses were: (**H1**) higher levels of concern for the environment (pre-existing beliefs) would be associated with and predict more bystander support for the eco-hacktivism, and higher moral regard and connection to the (**H2**) eco-hacktivism, (**H3**)

spokesperson, and (*H4*) social media commentator would predict more willingness to donate to the hacktivists' cause.

5.4 Methods

5.4.1 Participants and Procedure

Participants were recruited through departmental mail outs at National University of Ireland, Galway (NUIG) social media (Facebook, Twitter), participants at talks from the first author, snowballing through shared posts on social media, and the human subject pool for undergraduate students. Questionnaires were anonymously completed online. Only those who completed the questionnaire through the human subject pool were compensated with course credit for their participation ($n = 90$). Full ethical approval was obtained from NUIG Research Ethics' Committee (19-Aug-21; Amend 1912) prior to data collection. Data were collected from January 18 – March 24, 2020. There were a total of 350 participants (267 female, 79 male, 3 identifying as other, and 1 preferred not to say) retained for analysis.³ The average age was 28.25 years, ranging from 18-72 ($SD = 11.70$).

After the consent and demographic information had been completed, participants read a news article that described a fictional company being hacked and blackmailed for dumping plastics into the ocean (Appendix A.1). Participants were asked to answer questions on three actors in the news article in this order: (1) the environmental activists (i.e., eco-hacktivists), (2) the spokesperson for the hacktivists, and (3) a person on social media who tweeted support for the hacktivists' actions. The order remained consistent for each participant; however, to avoid order effects, questions within each section were randomized. The final question asked participants about their willingness to donate through a crowdfunding campaign to support the activists.

5.4.2 Measures

For the questions on the actors in the vignette, the instructions were identical. For instance, "Thinking about the article you just read, please answer the following questions about your opinion on _____" with a small reminder of who that person/group was (e.g., "*Enviro-mous* are the environmental activists who did the hacking"), followed by "There are no right or wrong answers, so try to be as honest and accurate as possible."

³ Three were removed for being multivariate outliers, six for reading the article too quickly, and two for being under the age of legal consent.

The questions for the eco-hacktivist group (Enviro-mous; EM), referred to in the vignette as activists to minimize bias, were created by the authors based on four moral and ethical concepts—moral subjectivism, cultural relativism, ethical trust, and virtue ethics (see Appendix A.2). Each category had four items with one reversed scored item per category, thus totaling 16 questions. However, upon review, we decided that the item, “Do you think people need to take action to clean up our water?” was included as a control question on the topic. However, as this question did not directly ask about the activists, but about environmental issues more generally, it was not included in the morality scale. Participants were asked to indicate their level of agreement on a 10-point Likert scale from 1 *not at all* to 10 *completely* on the 15 remaining items for the hacktivist morality scale.

The second and third sections had 11 questions with one reversed scored item each (see Appendix A.3 and A.4) on the same 10-point Likert scale as with EM. These sections were identical but were towards the spokesperson or the social media commentator, respectively. The final question asked participants to indicate their willingness to donate to a crowdfunding campaign to support EM and their cause on a 10-point Likert scale with 1 *not at all* and 10 *completely*.

5.5 Results and Discussion of the Principal Component Analyses (PCAs)

Since the morality scales were created for this study, it was important to verify the dimensionality of the items. Three separate PCAs were conducted, one for each actor in the vignette (e.g., the eco-hacktivists, the spokesperson, and a social media commentator). On a univariate level, all variables had acceptable levels of skewness and kurtosis except social media use and how much water needed to be clean (pre-existing belief measure). Transformations made both social media use and pre-existing beliefs variables more leptokurtotic. Thus, we retained the raw data given the large sample size.

All other assumptions were met, and we also assessed the appropriateness of each PCA based on the Kaiser-Meyer-Olkin measure being above .70, a significant Bartlett’s test of sphericity, some correlations of at least .30, and anti-image with some values approaching zero (Tabachnick et al., 2007). Components were extracted based on both >1 eigen values, inspection of the scree plot, and nonredundant residual percentages to attempt to avoid under or over extraction (Cota et al., 1993).

5.5.1 PCA for the Eco-Hacktivists' Morality Scale

The Kaiser-Meyer-Olkin measure was .90 with a significant Bartlett's test of sphericity ($p < .001$). The total variance explained was 69.36%. Four factors had an eigen value >1 , but we restricted the extraction to three factors based on the scree plot. The factors and loadings were obtained using a Promax rotation with Kaiser normalization, and with 56% of the nonredundant residuals with absolute values greater than .05. The percentage for the nonredundant residuals indicates more work needs to be conducted, as it slightly exceeds the recommended 50% (Field, 2009). If we extracted four components, the percentage of nonredundant variables deemed the solution good. However, only one item then loaded on the fourth component, indicating there was an over extraction and not suitable.

Two items were eliminated for ambiguous loadings.⁴ The three components were: EM-Moral altruism, EM-Morally perceived subjective norms, and EM-Morally questionable motivations (reversed scored, as a higher score on the questionable motives indicated less bystander support for the hacktivists). EM-Moral altruism consisted of items that related to the justified "rightness" of EM's actions in the hacking. EM-Morally perceived subjective norms consisted of items with respect to how participants thought others would perceive EM's actions; whereas EM-Morally questionable motives consisted of items that related to trusting the true intentions of EM's hacking. The matrix coefficients and component loadings are in Supplementary Table 5.1.

5.5.2 PCA for the Spokesperson Morality Scale

The Kaiser-Meyer-Olkin measure was .92 with a significant Bartlett's test of sphericity ($p < .001$). The total variance explained was 67.63%. There were two components with eigen values > 1 . A Varimax rotation with Kaiser normalization was used, which resulted in 46% of the nonredundant residuals with absolute values greater than .05, meaning the solution was deemed good. One item was removed for ambiguous loadings. The two spokesperson components were: Spokesperson-Virtue morality and Spokesperson-Moral social connectivity. The Virtue morality component included items that required judgment on different attributes while the Social connectivity component consisted of items that related to how the person would interact with the spokesperson and/or their statement. See Supplementary Table 5.2 for the final PCA structure

⁴ Ambiguous loadings were removed when an item had loadings on two or more components with less than .10 difference

matrix coefficients and component loadings.

5.5.3 PCA for the Commentator Morality Scale

The Kaiser-Meyer-Olkin measure was .93 with a significant Bartlett's test of sphericity ($p < .001$). The total variance explained was 72.27% with two factors having an eigen value >1 . As with the PCA for the spokesperson, the components and loadings were obtained using a Varimax rotation with Kaiser normalization. The solution resulted in 40% of the nonredundant residuals with absolute values greater than .05. While one of the components for the commentator was the same as for the spokesperson (Virtue morality), the second component, Commentator-Moral behavioral intention, was different from the spokesperson in that the component consisted of items on how the participants thought they would behave in response to the commentator. See Supplementary Table 5.3 for the final PCA structure matrix coefficients and component loadings.

We had anticipated that the spokesperson and commentator components' dimensionality would be identical. However, one item (How much do you think you would like this person?) loaded onto different components between the two actors. In both PCAs, that item had fairly high and near equal loadings on both components though not statistically close enough to be an ambiguous item. This could in part explain why with slight variation it loaded onto different components for the spokesperson and commentator.

After the PCAs, we created the components and checked the Cronbach alphas. All Cronbach alphas except one were excellent (EM-Moral altruism $a = .91$; EM-Morally perceived subjective norms $a = .71$; Spokesperson-Virtue morality $a = .87$; Spokesperson-Moral social connectivity $a = .86$; Commentator-Virtue morality $a = .91$; and Commentator-Moral behavioral intentions $a = .88$). EM-Morally questionable motives' alpha was unacceptable ($a = .34$), resulting in its removal from further analysis.

5.6 Results

The vast majority ($n = 330$) indicated they used social media daily or several times per week with only nine indicating they did not use social media. In terms of participants' environmental stance, 243 agreed to the maximum that people need to take action to clean water ($M = 9.20$, $SD = 1.54$). In the bivariate correlations, the six components that were retained for the regression analysis were all significantly positively correlated with each other (ranging from $r = .23$ to $.76$; see Table 5.1). Pre-existing beliefs on environmental action to clean water was

weakly, yet significantly, positively associated with five of the six components from the PCAs (Commentator-Behavioral intentions was the only component not significantly correlated). However, one's pre-existing beliefs on clean water was not associated with the willingness to donate to the eco-hacktivists' cause.

Table 5.1

Zero-order Correlations

	1	2	3	4	5	6	7	8	9	10
1 Gender ID										
2 Age	-.13*									
3 Social Media Use	.08	-.21**								
4 Clean water	.16**	-.05	.09							
5 EM-Altruism	.01	-.12*	.08	.25**						
6 EM-Perceived subjective norms	-.03	.01	.03	.12*	.43**					
7 Spoke-Virtue	.02	-.03	.05	.26**	.71**	.39**				
8 Spoke-Social	-.05	-.04	.06	.14**	.67**	.34**	.67**			
9 Comm-Virtue	.08	-.09	.05	.23**	.67**	.32**	.76**	.62**		
10 Comm-Behavioral intention	-.06	-.07	.11*	.04	.50**	.23**	.44**	.76**	.64**	
11 Willing to donate	.02	-.22**	.13*	.09	.50**	.16**	.42**	.59**	.47**	.53**

*Significant at .05 level (2-tailed) **Significant at .01 (2-tailed)

In the hierarchical regression analysis to predict willingness to donate, all assumptions were met. There were some strong correlations, but none were $>.80$, tolerance ranged from .26 to .99, and VIF ranged from 1.01 to 3.93, indicating there were no issues with multicollinearity (Tabachnick et al., 2007; Kutner et al., 2004). In model 1, we included age, social media use, and how much participants indicated action to clean water was needed (pre-existing beliefs on the environment; See Table 5.2).⁵ The model was statistically significant predicting 6% of the variation in the outcome ($F[3, 346] = 7.63, p < .001$). In model 2, the six PCA components for the actors in the vignette were added. The additional variables significantly improved the predictive value of the model, R^2 change = 36.1%, $F(6, 340) = 35.45, p < .001$. The model as a whole explained 42.3% of the variation in the outcome (Adjusted $R^2 = 41\%$; $F[9, 340] = 27.70, p$

⁵ Gender was not included as it was not significantly correlated to the DV, and analysis revealed it acted as a suppressor variable in the model.

< .001). Being younger and higher on EM-Moral altruism, Spokesperson-Moral social connectivity, and Commentator-Moral behavioral intention were significant predictors of a willingness to donate to a crowdfunding campaign for the hacktivists' cause.

Table 5.2

Willingness to Donate to Eco-hacktivists through Crowdfunding Coefficients

Model Predictor	1*			2*				
	<i>t</i>	sig	CI(95%)	<i>t</i>	sig	CI(95%)		
Age	-.20	-3.77	<.001	-.06, -.02	-.16	-3.69	<.001	-.05, -.01
Social Media Use	.09	1.61	.11	-.06, .56	.05	1.22	.22	-.09, .40
Clean Water	.07	1.33	.18	-.05, .27	-.03	-.57	.57	-.17, .10
EM-Altruism					.19	2.91	.004	.01, .05
EM-PSN					-.08	-1.72	.09	-.08, .01
Spoke-Virtue					-.03	-.38	.70	-.04, .03
Spoke-Social Con.					.34	4.18	<.001	.05, .14
Comm-Virtue					.07	.85	.40	-.02, .04
Comm-Beh intention					.15	2.02	.05	.00, .10
<i>R</i> ²		.06				.42		
Adjusted <i>R</i> ²		.05				.41		

**p* < .001

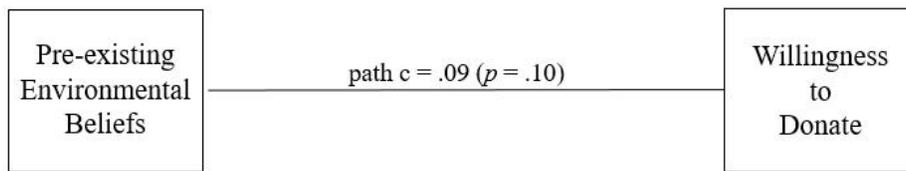
EM=Enviro-mous; PSN=Perceived subjective norms; Spoke=Spokesperson; Con=Connectivity; Comm=Commentator; Beh=Behavioral

To analyze the effects of pre-existing beliefs, we ran mediation analysis. The mediation path was pre-existing environmental beliefs (predictor variable) and the three morality components that were significant in the regression model (mediator variables) to willingness to donate to the hacktivists' cause (outcome variable). The mediation analysis was conducted in Process v.4.0 (Hayes, 2012). Pre-existing beliefs significantly predicted EM-Moral altruism and Spokesperson-Moral social connectivity but not Commentator-Moral behavioral intention (see paths a^1 , a^2 , and a^3 in Figure 5.1, respectively). We found that the indirect effects of pre-existing beliefs through EM-Moral altruism and Spokesperson-Moral social connectivity were statistically significant, as there was no zeroing effect on the confidence intervals (CIs; see Figure 5.1 paths $a*b^1$ and $a*b^2$). Zeroing means both CIs were either below or above zero, and

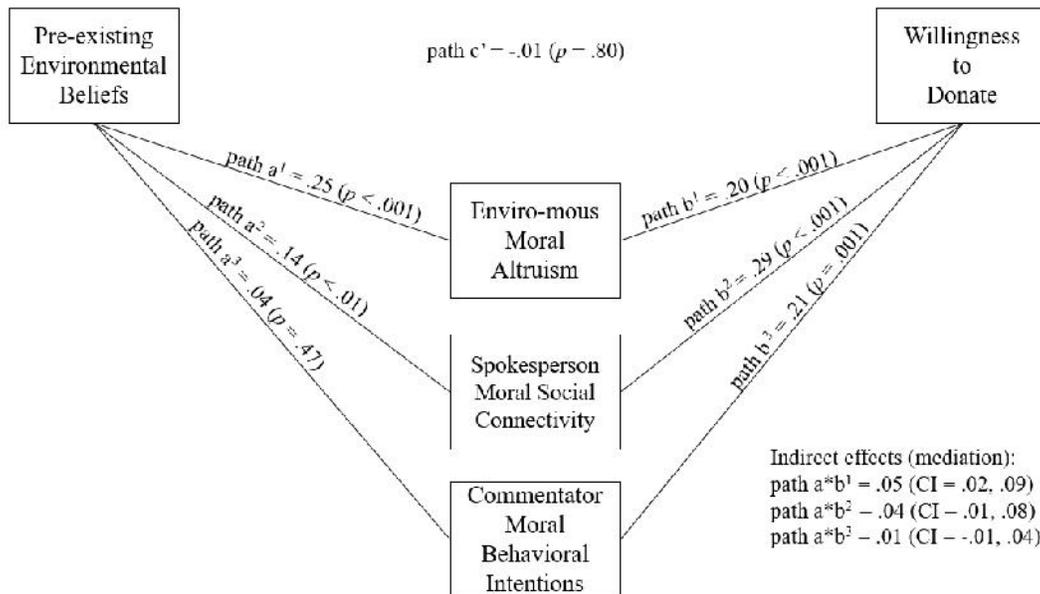
this indicates significant mediation is occurring. Thus, pre-existing environmental beliefs was completely mediated in those two relationships to the outcome variable. There were no significant indirect effects (mediation) with pre-existing beliefs through Commentator-Moral behavioral intention with willingness to donate to the hacktivists' cause, as can be seen by the zeroing of the CIs (path $a*b^3$ in Figure 5.1).

Figure 5.1

Pre-existing Beliefs and Willingness to Donate without Mediators in the Model



Direct and Indirect Effects of Pre-existing Environmental Beliefs with Mediators in the Model



All coefficients are standardized. Analyzed by Process v4.0 (Hayes, 2012). Bootstrapping was 5,000, and the CIs were set at 95%.

5.7 Discussion

Hackivism, a non-violent form of prosocial unethical behavior in terms of physical damage, has become an increasingly popular tactic for groups to push their social justice and

political agendas. Additionally, there is an increasing amount of online crowdfunding campaigns which seek to raise money for assistance with medical bills, research, and to support victims of environmental disasters (GoFundMe, 2022). We wanted to investigate if crowdfunding could be a mode that individuals would be willing to donate to in order to support groups who engage in online prosocial unethical behavior, such as hacktivism.

5.7.1 Younger People More Willing to Donate

In the regression analysis, we had partial support for our hypotheses. Age was one of the strongest, and only background, variable to be significant in line with previous research (Holt & Kilger, 2012; PytlikZillig et al., 2015). This in part could be due to the fact that younger people use social media more, as was found in the bivariate correlations. Crowdfunding campaigns are advertised almost exclusively through online avenues, such as social media sites like Twitter, Facebook, and Instagram. According to their annual report, GoFundMe, one of the biggest online crowdfunding campaign sites, raised nearly \$5 billion in 2021, indicating the prevalence of online crowdfunding (GoFundMe, 2022). Thus, if younger participants had more familiarity and trust of online crowdfunding donations, this could explain their willingness to donate. Conversely, older participants may have been less trusting of crowdfunding and less willing to donate. Younger people have long been involved in activism. However, since 2018, this involvement has intensified especially surrounding environmental causes. Younger people, like Greta Thunberg, and organizations, like RisingUp!, have been heavily involved in environmental activism (Pickard et al., 2020). Thus, our results are in line with previous research where younger individuals are more likely to contribute to environmental causes even if the causes are using less conventional means (Bowman, 2020), such as hacktivism in the current study.

5.7.2 Pre-Existing Beliefs

One of the main aims and hypotheses of the current study was to examine if participants were more willing to support prosocial unethical behavior if it aligned with their pre-existing beliefs. In the bivariate correlations, the pre-existing beliefs on the importance of taking action to clean waters was weakly associated with the majority of morality components, indicating that those who already believed that action to clean water needed to be taken regarded the eco-hacktivists and their supporters more morally favorably. However, the pre-existing belief was not significantly correlated with the willingness to donate. In the regression analysis, like the bivariate correlation, our hypothesis (*H1*) was partially supported that an alignment with pre-

existing beliefs indirectly predicted a willingness to donate to support the hacktivists' cause. The more participants believed the environment was an important issue, the more moral support that was predicted for EM and the spokesperson, which then predicted a more willingness to donate (pre-existing beliefs was completely mediated by those two morality facets). Thus, pre-existing beliefs were only significant through indirect effects. Previous research found that participants' pre-existing attitudes towards hacktivism did predict some bystander support for hacktivism, but not for all forms (PytlikZillig et al., 2015); however, that research did not ask about general ideology on the topic but whether participants supported the concept of hacking (versus cyber-terrorism), which may explain their direct effects and our indirect effects. It is interesting that there was no mediation effect with the social media commentator. This is a novel aspect in our study, and further research is needed to explicate this finding.

5.7.3 Moral Perceptions and Willingness to Donate

A few studies had previously investigated those who support, but do not directly do, the hacking (Heering et al., 2020; PytlikZillig et al., 2015). PytlikZillig and colleagues had a small study ($N = 78$) where they found that overall perceived shared values and integrity of the hackers were the most reliable predictors. In the open-ended questions, participants indicated that the morality of the hackers was an important factor in whether support was shown. Heering et al.'s (2020) research did not focus on the perceived morality of the hackers but on support for what they called social banditry (i.e., support for others taking from the powerful to help those less powerful). We argue even though morality was not measured in their study, it could have had moral facets to it that led to more support of the hacktivists. In the current study, our hacktivism contained a prosocial component where the hacktivism was to extort money to clean up the dumping of plastics the company had been doing. Thus, it could be the prosocial element in the current study that increased bystander support for the hacktivism, which was missing from the climate hacktivism scenario in PytlikZillig and colleagues' (2015) studies. In Heering and colleagues' (2020) research, there was an aspect of prosociality in their first study, but their second study had a more self-serving aspect, where participants would directly gain from the hacking, potentially explaining why participants indicated more support.

In the regression model, two facets of morality were included for the hacktivists: Moral altruism and Morally perceived subjective norms. Only perceived moral altruism of the hacktivists was significant, partially supporting our hypothesis ($H2$). The Moral altruism facet

was a perception of the justified actions of the hacktivists. This is in line with previous research where hacktivists being perceived as benevolent predicted more support for them (PytlikZillig et al., 2015), and altruistic beliefs would align with a benevolence factor. Moral altruism's significance could also be explained by the hacktivists' actions being seen as a utilitarian (fixing a current issue and preventing similar actions in the future) or retributive punishment (i.e., victim blaming in such that the target brought it on themselves; Weiner et al., 1997). Some research has found that utilitarian punishment garners more support while others have found retributive does (Carlsmith & Darley, 2008; PytlikZillig et al., 2015). However, Carlsmith (2008) found that participants will explicitly claim their reasoning for punishments were more in line with utilitarian concepts, yet the behavior of awarding punishments was more in line with retributive punishments. This indicates there is a disconnect between people's perceptions of what they support and their actions. Since the hacktivism in the current study could be perceived as either (or both) utilitarian and retributive, the Moral altruism may be influenced by that perception regardless of how the participants viewed the hacking. Retributive or utilitarian punishment perspectives towards supporting unethical behavior are highly individual and rely on personal approaches. This then may explain why morally perceived subjective norms was non-significant in our model because participants do not consider how others would support (or not) the crowdfunding campaign; thus, a morality facet of how others attribute support could be insignificant to one's behavior.

Only one of the morality facets for the spokesperson for the hacktivists (Moral social connectivity) was a significant predictor in participants' willingness to support a hacktivist crowdfunding campaign (*H3*). Thus, our findings partially support our hypothesis. The spokesperson was included in the study as often hacktivists, like Anonymous, share their hacking widely through social media platforms, and we aimed to use the spokesperson to represent this aspect while putting a face to the hacktivism that was one step removed from the hacktivists. Moral social connectivity encompassed how participants would engage with the spokesperson online and feel connected. While, to the best of our knowledge, there is no extant literature with a spokesperson being included in the morality judgments of predicating unethical behavior, one study found that online political activism did predict participants were willing to engage in more disruptive acts (Holt & Kilger, 2012), demonstrating that connection to action may be a better predictor than the dispositional virtue of an actor. Thus, this could explain why Moral social

connectivity with the spokesperson was the strongest predictor in our model. In the PytlikZillig et al. (2015) study, they had found that attitudes towards the hacktivists were more important compared to the targets. In their study, the hacktivists were the public representation of themselves; whereas, in the current study, the spokesperson was the most public face of the hacktivism. Therefore, it could be that it is not necessarily the hacktivists, but the perceived morality of the actor who most engages with society, was the most crucial factor in predicting support through online crowdfunding.

Another explanation for this could be higher social connectivity to the public face of the hacktivism could lead to more moral disengagement. Two ways in which participants could have morally disengaged are through moral justifications, which portray the unethical behavior as an act benefiting society, and advantageous comparison, which allows individuals to downplay the severity of the behavior by indicating the unethical behavior was not as severe as what caused it (Bandura, 1999, 2017; Moore, 2015). Both of these mechanisms could be found in how the spokesperson justified the hack in the article (“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment”). Thus, if participants felt that dumping plastics into the water was worse than any financial cost or loss of jobs due to the hack, the conditions for moral disengagement may have been met. We tried to balance the support for the hacktivists by mentioning specifically how both the government-run company and employees were harmed by the hacking. However, that may not have sufficed if the hacktivism was still perceived as prosocial unethical behavior, and participants were more socially connected to the actor stipulating these facets. Moral disengagement has additionally been found to be associated with moral relativism (Moore, 2015). Moral relativism is a very broad generalized concept. However, based on our findings, the perceived morally altruistic intentions of the hacktivists and the perceived moral social connectivity to whomever the public face of the hacktivists is may provide more specific insight into the relationship between moral disengagement and moral relativism. Future research should investigate if specific aspects of morality are more associated with the propensity to morally disengage, and how crowdfunding may inherently be a platform that allows individuals to morally disengage and support unethical behavior.

The social media commentator actor in the vignette was to investigate if a non-involved peer-like actor (i.e., social influence) perceived morality would predict a willingness to donate.

The moral behavior intention facet was significant; thus, our hypothesis (*H4*) was partially supported. Again, no previous research has examined this type of actor to which to compare our results. However, a significant amount of research has found that participants, especially adolescents or young adults, support more antisocial behavior (Eamon, 2001; Yavuzer et al., 2014; Thompson et al., 2020) and positive activism (Li & Liu, 2021; Rosenberg, 2013; Altbach, 2007) based on peer influence. Thus, our findings are in line with this previous research. The effect may have been stronger if the social media commentator had been a friend/colleague, known social media contact, or known social media influencer.

Surprisingly, the virtue morality facets, a specific type of moral relativism, for either the spokesperson or social media commentator were non-significant predictors in our model. This indicates that the willingness to donate to an eco-hacktivist crowdfunding campaign was not predicted by perceived moral dispositional facets when the other types of morality were included in the model. As these actors were novel aspects in our study, further research is needed. One interesting aspect of the study was the gender neutral presentation of each actor. It may prove interesting in future research to ask participants which gender they perceive the actors to be, and analyze if that perception influences both morality facets and the willingness to support prosocial unethical behavior.

5.7.4 Limitations

The study was cross-sectional in nature; therefore, causation cannot be determined. There are many forms of hacktivism, and the predictors of one may not predict another. Moreover, predictors for online prosocial unethical behavior may not be predictors for physical in-person forms of prosocial unethical behavior. Thus, generalization of our findings regarding eco-hacktivism must be done with caution to other contexts. However, conducting the PCAs provides a strong base for future research on different morality facets to be investigated in other forms of unethical behavior. We euphemized, or sanitized, how the hacktivists were named in the vignette (i.e., activists) primarily to attempt to avoid bias, but this is also a main aspect in the process of moral disengagement (Bandura, 1991, 1999, 2002, 2017). Thus, sanitizing the naming of the hacktivists may have assisted with moral disengagement, creating a more willingness to donate. Had we referred to them as eco-extremists or cyber-terrorists, we could have biased the results in the other direction. It may be important to note that the term hacktivist in and of itself could be perceived as euphemistic language, and the use of language should be examined in future

research to investigate if the terms produce different results.

5.8 Conclusion

As technology advances, there are always potential positives and negatives for online extremism. Hacktivism and cyber-terrorism are the latter. Overall, only specific facets of morality may predict prosocial unethical behavior. With online activism and increased potential for hacktivism, our results could predict how hacktivism will be perceived by many as well as predict the attributes of hacktivism, which may lead to financial support by society at large. This then could create bottom-up activist/extremist movements. While in research, it is generally the motives or trust of the hacktivists themselves that garners the most support, the moral social connectivity of the spokesperson for the hacktivists was the strongest predictor of willingness to donate to a crowdfunding campaign in our study. It could be then that it is the public face of the hacktivism that requires the higher moral perceptions in order to predict support, not just the perceptions of the hacktivists. Perceived moral “goodness” of the hacktivists, however, was also an important and significant moral facet. As younger people were more willing to donate to the hacktivist cause, it could indicate crowdfunding could become an important method to gain financial support for hacktivism going forward, and as such, counter-extremism measures should investigate this to supplement interventions. Based on our findings, crowdfunding could be a new social movement perspective (bottom-up social movements) on supporting activism.

5.9 Supplementary Materials

Supplementary Table 5.1

PCA Component Loadings for Enviro-mous

Items	Components		
	1	2	3
Component 1: Moral Altruism ($\alpha = .92$)			
5.73% sum of squared % of variance*			
EM1 Actions were right	.83	.42	.21
EM2 Made the company clean up in the right way	.75	.29	.10
EM4 Actions were right for Ireland	.81	.47	.14
EM5 Actions protect Irish waters and environment	.75	.36	.08
EM8 Trust EM to use money to clean up the oceans	.82	.10	.37
EM9 Trust EM to use excess £10 million for other environmental issues	.81	.12	.39
EM12 Are good people	.81	.32	.29

EM14 Have the qualities of virtuous people	.80	.29	.32
Component 2: Morally Perceived Subjective Norms			
<i>(a = .71)</i>			
2.62% sum of squared % of variance			
EM6 Irish people support EM and their actions	.45	.86	.07
EM7 Irish people would reject EM (R)	.17	.85	-.02
EM13 Considered good people by others	.41	.56	.30
Component 3: Morally Questionable Motives			
<i>(a = .34)</i>			
1.73 sum of squared % of variance			
EM10 Hack for other purposes (R)	.12	.11	.80
EM11 Ulterior motives (R)	.50	.01	.67
Eliminated Items			
EM3 Actions were irresponsible (R)			
EM15 EM members are dishonest (R)			

Extraction: Principal Component Analysis. Rotation: Promax with Kaiser Normalization

*When components are correlated, sum of squared loadings cannot be added to obtain a total variance

Supplementary Table 5.2

PCA Component Loadings for Spokesperson

Item	<u>Component</u>	
	1	2
Component 1: Virtue Morality (<i>a = .87</i>)		
35.89% sum of squared % of variance		
Spoke6 Intelligent is this person	.81	.27
Spoke7 Well informed is this person	.77	.41
Spoke8 This person has been educated	.82	.21
Spoke9 Respect this person	.71	.48
Spoke10 Criticize this person (R)	.56	.01
Spoke11 Respect this person's opinion	.62	.47
Component 2: Moral Social Connectivity (<i>a = .86</i>)		
31.92% sum of squared % of variance		
Spoke1 Would like this person	.52	.64
Spoke2 Follow this person on social media	.32	.80
Spoke4 Do something similar to this person	.04	.84
Spoke5 Like or share this person's post	.29	.84
Eliminated item		

Spoke3 Agree with this person

Extraction: Principal Component Analysis. Rotation: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

Supplementary Table 5.3

PCA Component Loadings for Commentator

Items	Component	
	1	2
Component 1: Virtue Morality ($\alpha = .91$)		
43.34% sum of squared % of variance		
Commentator1 Would like this person	.70	.52
Commentator3 Agree with this person	.73	.46
Commentator6 Intelligent is this person	.82	.31
Commentator7 Well informed is this person	.81	.37
Commentator8 This person has been educated	.80	.30
Commentator9 Respect this person	.76	.41
Commentator10 Criticize this person (R)	.54	-.38
Commentator11 Respect this person's opinion	.79	.29
Component 2: Moral Behavioral Intentions		
($\alpha = .88$)		
28.93% sum of squared % of variance		
Commentator2 Follow this person on social media	.34	.83
Commentator4 Do something similar to this person	.23	.79
Commentator5 Like or share this person's post	.34	.83

Extraction: Principal Component Analysis. Rotation: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

5.10 Overall Chapter Conclusions

This research was one of the few studies that investigated bystanders' support for hacktivism through a willingness to donate to the hacktivists' cause. It was the first to examine morality and moral connectedness to varying actors involved in the hacktivism. Three key findings from this study were: (1) different facets of morality for each actor predicted a willingness to donate to a crowdfunding campaign in support of the hacktivist; (2) some sense of moral connectedness to extremist actors seems to negate objective morality (i.e., hacking is amoral); and (3) pre-existing beliefs that align with the extremist behavior predict moral connectedness, which in turn predicts bystander support for extremism. Suppression to align with

pre-existing beliefs has not been discussed in any extant research, to the best of my knowledge, and this should be investigated in future research. This was not theorized nor hypothesized in our model or for this study. In Chapter 9, I discuss how the findings from this study align with the overarching research aim of this thesis. Study 2 (Chapter 6) will build on these findings to investigate if being asked to suppress one's TFBs about the eco-hacktivism article will result in objective and subjective rebound effects (i.e., more intrusive thoughts and an increase in negative affect).

Chapter 6

6.0 Study 2: Can Suppressing *and* Expressing Yourself Have Negative Impacts?

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6.1 Abstract

People engage with and self-select to watch more negative or sensational news, but the effects are not clear on how this can impact people. We wanted to investigate if being forced to suppress thoughts, feelings, and beliefs about an illegal dumping/eco-hacktivism fictitious news article would increase the amount of intrusive thoughts one has and negative affective state compared to when participants could express themselves. We randomly assigned 158 participants to one of three conditions: suppression, expression, and control to investigate if they would experience objective and subjective rebound effects after reading a news article. We found that regardless of condition (1) participants reported a significant increase in negative affect, but no decrease in positive affect after reading the news article and (2) participants who were more likely to engage in suppressive techniques reported higher negative and lower positive affect scores. These indicate that engaging with a negative news article does increase negative affect even when participants were allowed to vent their emotions about it.

Keywords: suppression, extremism, negative news, ironic theory, ego depletion, frustration aggression hypothesis

6.2 Introduction

With the amount of news that individuals are inundated with on a daily basis across television, radio, print, and online sources, it is important to investigate how people react to negative news, such as environmental catastrophes, crime, and violence. Evaluating the impact of negative news on people and their subjective perceptions of it have long been studied (Veitch & Griffitt, 1976), and negative news is becoming more prevalent (Farnsworth & Lichter, 2006). This could in part be due to a feedback loop where negative news draws more focus and audience engagement (e.g., interaction on social media), media outlets then show more negative news events to gain more attention, and people then see more negative news (Soroka et al., 2019). This can result in an overrepresentation of negative daily events, distorting the perception of their true frequency (van der Meer et al., 2019).

Viewing negative news has been found to lead to many maladaptive effects from poorer health (Boukes & Vliegthart, 2017), more negative emotions and less psychological resilience—ability to adapt to adversity—(Gao et al., 2020), and more political extremism (Thesen, 2018). Thus, it is important to investigate the reaction that negative news can elicit from people. For the current study, we wanted to investigate different methods of regulating emotional reactivity to the news article (e.g., suppressing the information that was read or expressing one's thoughts on it) to determine if these methods would influence the news article's impact. We additionally wanted to examine if participants would experience a change in their positive and negative affects after reading a negative fictitious news article on illegal pollution dumping and eco-hackivism.

6.2.1 *What Is Suppression and How Does It Impact People?*

Suppression is a strategy where individuals attempt to inhibit thoughts, feelings, beliefs (TFBs), or behaviors that are unwanted or intrusive (Wegner, 1994). Suppression can at times be an efficacious strategy in the shorter term (Mund & Mitte, 2012), but even in shorter term suppression can demonstrate negative effects (Yam, 2018; Abramowitz et al., 2001). However, suppression can also be maladaptive, leading to a multitude of unwanted side effects for one's mental health, such as an increase in anxiety and depression (Dryman & Heimberg, 2018) and physical well-being (Chapman et al., 2013). Another negative aspect of suppression is rebound effects. Rebound effects in essence are increases in the actual TFB, emotion, or behavior you are trying to suppress (i.e., the target or intrusive thought; Wegner et al., 1987). For instance, if you

were trying to forget about a negative comment about yourself on social media, by actively trying to forget (i.e., suppression), you end up thinking about it more than you would have if you had not been trying to forget about it. That is the rebound effect. Rebound effects have been shown to lead to greater emotional reactivity and physical arousal while decreasing positive (but increasing negative) affect (Robertson et al., 2012). Rebound effects are often measured in research objectively by participants counting the number of times they remember the intrusive thought—the thought they were instructed to suppress. However, rebound effects can be measured subjectively by changes in people’s positive and negative affect scores, as has been demonstrated in previous research (Robertson et al., 2012).

There are two main theories that have attempted to explicate the psychological mechanisms and consequences that occur when individuals engage in suppression: Limited Resource Theory (Baumeister et al., 1998) and Ironic Process Theory (Wegner, 1994). Both of these theories explain how rebound effects occur. The Limited Resource Theory, also referred to as ego depletion, proposes that self-regulation is determined by a regulatory energy resource that is finite and can be depleted (Baumeister et al., 1998). Thus, once this energy resource is exhausted, rebound effects occur because individuals simply are no longer capable of continued suppression. For instance, if an individual were asked to suppress their TFBs about a newspaper article, according to Limited Resource Theory, there would be an increase in TFBs about the article as they became more cognitively fatigued because their willpower or ability to suppress becomes increasingly depleted.

Ironic theory takes a different theoretical approach to explain rebounds. Ironic theory postulates that the act of trying to suppress leads to that very TFB becoming hyperaccessible, causing the TFB to become more frequent and intrusive (Wegner & Erber, 1992; Wegner 1994; Yam, 2018). While suppressing, two cognitive processes—controlled distractor and automatic target searches—become activated (Wegner & Erber, 1992). Ultimately, the controlled distractor tries to find something else to focus on to distract from the TFB one is trying to suppress; whereas, the automatic search process monitors the effectiveness of this suppression. The monitoring of the efficacy of the suppression, however, links the suppressed TFB to every distractor TFB, creating hyperawareness or hyperaccessibility of the TFB one is trying to suppress. This then results in rebound effects. Thus, if an individual were asked to suppress their TFBs about a newspaper article, according to Ironic theory, information in the newspaper article

becomes associated with every other TFB the person thought to distract themselves (e.g., the television program that was watched or the song on the radio) through the automatic search assessment. This results in a rebound effect.

If suppression leads to rebound effects, then theoretically expression should lead to fewer rebound effects. There are two main research areas with differing perspectives and results on expression. The first area is health or clinical psychology/psychiatry where some have found expressing one's TFBs or emotions led to better physical and psychological well-being in longitudinal studies (Patel & Patel, 2019; Chapman et al., 2013). The rationale was individuals who engage in emotional suppression or "bottle up" their emotions experience more negative emotions. Some therapy research has reported opposite findings, however (Kennedy-Moore & Watson, 1999). The second area is experimental psychology that has found that venting (i.e., forceful expression), especially anger, led to rebound effects with more anger actually experienced (Parlami et al., 2010; Bushman, 2002). Venting created a feedback loop where anger was expressed, there was more attention to the anger, thus more anger was felt and again expressed. However, as Parlami and colleagues found there are times venting had no negative (and also no benefits) impacts depending on at whom the venting was directed. When venting was at a third party, rather than an offender, venting led to an increase in anger. This could suggest that how individuals vent could impact whether it is a release and could decrease rebound effects or whether it creates hyperaccessibility and could increase rebound effects. In the current study, we ask participants to write their TFBs on an eco-hacktivism article. This may be expressing, but we suggest it is not likely to be enough to be forceful expressing (i.e., venting).

To the best of our knowledge, there are no previous experimental studies that have investigated TFB suppression and expression within the context of extremism nor how these instructions would influence objective and subjective rebound effects. We argue those who have been asked to express themselves will experience the fewest objective and subjective rebound effects; whereas, those who are being instructed to suppress their authentic TFBs would experience more rebound effects. This study is part of a suite of studies on psychology and extremism to seek to understand how bystanders react to media coverage of extremism.

6.3 Study Research Questions and Hypotheses

6.3.1 Research Questions

(1) Will there be rebound effects when people are asked to suppress their TFBs about a negative newspaper article compared to being allowed to express themselves or under no instructions? (2) Will participants experience subjective (e.g., PANAS scores) affect shifts to being asked to suppress and express their TFBs?

6.3.2 Hypotheses

(1) Participants who are asked to suppress their TFBs while reading the negative news article will experience the largest rebound effect, and those in the expression condition will experience the smallest rebound effect. (2a) Participants in the suppression condition will report increases in negative affect and decreases in positive affect from Time 1 to Time 2 compared to those in the other two conditions. (2b) Those assigned to the expression condition will report the smallest increase in negative affect.

6.4 Methods

6.4.1 Participants and Procedure

Participants were recruited via email and social media posts through the National University of Ireland, Galway (NUIG). Questionnaires were completed online and anonymously. Participants could either enter their name into a draw for one of three gift cards or to get credit towards their psychology courses. Full ethical approval was gained from NUIG's Research Ethics Committee before data collection commenced.

We needed to include a task (word search) to provide enough time to examine if participants experienced rebound effects. However, given we additionally hypothesized the experimental manipulation would result in affect changes, we aimed to minimize any potential emotive interference or response the word search words could elicit on participants' affective state. Thus, we piloted a set of words to determine the most neutral words to include in the word search. There were a total of 22 participants (12 women, 10 men), who were recruited in person on campus. No other demographic information was collected. There were no restrictions to participate other than participants needed to be 18 years of age or older. Participants were asked to rate each word on a 5-point Likert scale from 1 (*very negative*) to 5 (*very positive*) with 3 being *neutral* how they felt about 30 words (e.g., air, curtain, jumper). The scores for each word were averaged for all participants. The final 11 words (beige, box, carpet, desk, fixture,

impartial, keyboard, pavement, post, screen, and wire) that had the most neutral affect scores ($M = 3.07$, range 2.81 to 3.32) were selected (see Appendix B.1 for the final word search).

Participants were asked to indicate their current positive and negative emotional state (e.g., enthusiastic, upset; Time 1 [T1]) before completing demographic information. To try to ensure the experimental conditions were as standardized as possible to deal with extraneous effects caused by the remote testing environment, participants were then given a checklist of the materials they would need for the study (e.g., paper, writing space, and noise-free environment) before continuing to the next section of the experiment. Participants were then randomly assigned by the online survey platform to one of three conditions (suppression, expression, or control) with instructions (or not) before reading a fictitious eco-hacktivism article (see Appendix A.1).

In the suppression condition, participants read this information, “Next, you’re going to be reading a short newspaper article. Recent research has shown that reading and watching news clips on social media can bring up a lot of thoughts and feelings, and this has a significant negative impact on our health. One way that has been shown to help deal with news and stay healthy is to keep your emotions to yourself and try to ignore what you are thinking and feeling while interacting with the news.” The expression condition contained this statement, “Next, you’re going to be reading a short newspaper article. Recent research has shown that reading and watching news clips on media and social media can bring up a lot of thoughts and feelings, and this has a significant negative impact on our health. One way that has been shown to help deal with news and stay healthy is to express what you are thinking and feeling by writing your thoughts and feelings down after interacting with the news. After reading the article, you will be given the opportunity to write down your thoughts, opinions, feelings, and ideas about the article.” No instructions were given prior to the participants reading the eco-hacktivism article in the control condition.

After reading the article, participants in the expression condition were asked to write out their thoughts, feelings, and beliefs in relation to the article before proceeding through the study. In an attempt to balance the time across all conditions, participants in the control and suppression condition were instructed that the next page would take up to two minutes to load, and a timer was set for a delay of 105 seconds before they could continue to the next step, which was a distractor word search (see Appendix B.1) to allow to enough time to determine if participants

would experience a rebound effect. There was no delay to the word search for the expression condition to try to keep each condition a similar length. All participants received instructions before doing the word search to make a tick with their pen on the piece of paper beside them every time they had a thought, feeling, or idea about the eco-hacktivism article (i.e., measuring the rebound effect).

After the word search, participants were asked to indicate their affect state (Time 2 [T2]), the number of ticks they had made on their paper (rebound/accessibility), and subjective rebound questions (e.g., how accurate did they think the number or ticks were, did an idea get stuck in their head) to assess how the participants perceived their suppression effectiveness. Participants were asked to type which thoughts and feelings they had about the article before being asked to indicate their suppression proclivities. Lastly, on the debrief the study was explained to participants, and they were asked again to consent to their answers being analyzed before entering the draw either for the gift cards or psychology course credit.

There were 158 participants (121 females, 36 males, and one non-binary) who were retained for analysis after 18 participants were removed (11 for having participated in a previous similar pilot, 6 for not following the directions of the experiment, and 1 for being a multivariate outlier). The average age of the participants was 20.61 ($SD = 6.33$, range 18 - 69). The majority identified themselves as being White (95.6%), other including mixed race (2.5%), Asian (1.3%), or Black (.6%). Most indicated they used social media on a daily basis (90.5%), with the average number of hours per week on social media being 18.21 ($SD = 13.49$, range 0 - 60).

6.4.2 Measures

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) was used to evaluate experimental changes in positive and negative affect (i.e., subjective measure of rebound at T1 and T2). Participants were asked to rate how they feel in the present moment on 20 affect items (e.g., enthusiastic, upset) on a 5-point Likert scale, ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). There were 10 items on each subscale. The positive affect subscale reached excellent reliability at T1 ($\alpha = .88$) and T2 ($\alpha = .92$), as did the negative affect subscale with $\alpha = .89$ and $\alpha = .90$ for T1 and T2, respectively.

To assess people's natural tendency to use suppressive techniques/strategies in life, the White Bear Suppression Inventory (WBSI; Wegener & Zanakos, 1994) was used. Participants were asked to rate their level of agreement on a 5-point Likert scale (1 – *strongly disagree* to 5 –

strongly agree) on 15 items, such as “I wish I could stop thinking about certain things.” The WBSI reached an excellent reliability $\alpha = .90$.

6.5 Results

The study was a 3 x 2(2) mixed design, and we initially planned on running a repeated measures multivariate analysis of covariance (MANCOVA) to minimize the risk of making a Type I error. However, we found that adding both positive and negative affect as the repeated measures in the same analysis led to spurious findings. As MANOVA, or MANCOVA, analyses create the maximal linear combination with the inputted data, they have been found to create spurious, or even opposite, relationships with the omnibus test (Grayson, 2004; Hancock et al., 2001; Cole et al., 1993). For instance, if positive affect were entered into the MANCOVA analysis first, positive affect was non-significant, but negative affect would become significant and vice-versa even though the means within groups from T1 to T2 are near identical. Due to these apparent presence of spurious findings, we ran separate analysis of variances (ANOVA) and analysis of covariates (ANCOVAs).

The number of tick marks (i.e., objective assessment of a rebound effect) had a kurtosis of 4.72. This variable was transformed with a square root transformation, bringing the kurtosis into an acceptable limit of .44 for normality. This transformed variable was used for all analyses. The suppression score was not significantly correlated to the objective rebound measure ($r = .11$, $p = .17$); thus, it could not be used as a covariate in the ANCOVAs for the objective rebound analysis (Pallant, 2020). Suppression use did, however, significantly correlate weakly with the subjective measures of positive affect ($r = -.23$, $p = .003$ for T1) and moderately with negative affect ($r = .40$ and $.36$, $p < .001$ for T1 and T2, respectively). These correlations indicate that those with a higher propensity for suppression had less positive affect but more negative affect on the PANAS regardless of random assignment.

6.5.1 Objective Measure of Suppression Effects

A one-way between groups analysis of variance (ANOVA) was conducted to investigate if the objective measure of suppression effects (square root transformed number of tick marks) significantly varied by condition (suppression, expression, and control). The homogeneity of variance test did not violate the assumptions (Levene’s test of homogeneity $p = .50$). There was no statistically significant difference between groups, $F(2, 155) = .16$, $p = .85$, $\eta^2_p = .002$. See Table 6.1.

Table 6.1*Descriptives for Objective Suppression Measure by Condition*

Condition	N	M	SD	95% Confidence Interval	
				Lower Bound	Upper Bound
Suppression	59	2.00	.86	1.79	2.23
Control	47	1.96	1.07	1.65	2.27
Expression	52	1.90	1.06	1.61	2.20

DV: Number of intrusive thoughts (transformed)

6.5.2 Subjective Measure of Suppression Effects

Two separate two-way mixed ANCOVAs were conducted to examine whether participants' positive or negative affect scores (within-subjects' factors) differed pre and post by the experimental manipulation (suppression, expression, control—between-subjects' factors). Suppression scores were used as a covariate. For positive affect, Box's test indicated the assumption of equality of covariance was met, $p = .23$. The analyses revealed there were no main effects $F(2, 154) = .30, p = .74, \eta^2_p = .004$ (see Table 6.2 for descriptive statistics with the covariate), indicating there were no statistical differences on positive affect changes based on condition. For negative affect, the assumption of equality of covariance in Box's test was met, $p = .84$, and as with positive affect, no main effects were found $F(2, 154) = 1.08, p = .34, \eta^2_p = .01$, indicating there are no statistical differences based on condition (see Table 6.3 for descriptive statistics with the covariate).

Table 6.2*Descriptives for Positive Affect Time 1 and Time 2 by Condition and Covariate*

Condition	Positive Affect	M	95% Confidence Interval	
			Lower Bound	Upper Bound
Suppression	Time 1	27.46 ^a	25.59	29.33
	Time 2	27.79 ^a	25.57	30.02
Control	Time 1	25.83 ^a	23.73	27.93
	Time 2	26.72 ^a	24.22	29.23
Expression	Time 1	25.63 ^a	23.65	27.61
	Time 2	25.46 ^a	23.10	27.83

a. Covariates appearing in the model are evaluated at the following values:
 Suppression score = 56.40.

Table 6.3

Descriptives for Negative Affect Time 1 and Time 2 by Condition and Covariate

Condition	Negative Affect	<i>M</i>	95% Confidence Interval	
			Lower Bound	Upper Bound
Suppression	Time 1	18.57 ^a	16.73	20.42
	Time 2	17.37 ^a	15.67	19.07
Control	Time 1	19.29 ^a	17.22	21.36
	Time 2	16.29 ^a	14.38	18.19
Expression	Time 1	19.58 ^a	17.63	21.54
	Time 2	17.99 ^a	16.19	19.80

a. Covariates appearing in the model are evaluated at the following values:
 Suppression score = 56.40.

6.6 Discussion

Suppression use has been investigated in many research areas, and for our study, we expanded this into the area of extremism through a fictitious news article on eco-hackivism. The main aim of the study was to investigate if participants who were asked to suppress their TFBs, versus a control group or those who were allowed to express themselves, would experience a larger rebound effect regarding TFBs after reading the article. It seems intuitive that “bottling up” emotions leads to more negative effects while “blowing off” anger would lead to positive effects after releasing them. However, our results do not necessarily support this.

The objective rebound measure was through having participants make tick marks on a piece of paper during a distractor task; whereas the subjective measure compared pre- and post-task affective scores of the PANAS. Previous research was able to gain objective (i.e., tick mark counts) and subjective (i.e., affect changes) effects from suppression experimental manipulations (Wegner & Erber, 1992; Baumeister et al., 1998; Gross, 2002; Yam, 2018). Our results were not able to replicate any findings that suppression led to rebound effects, contrary to our hypothesized effects. In our total sample regardless of assigned condition, using suppression regularly, as measured by the WBSI, was associated with lower positive affect (pre) and higher negative affect scores (pre and post). This is line with previous research (Gratz & Roemer, 2004;

Gross & John, 2003) and supports extant research that has found suppression use is associated with more anxiety and depression (Dryman & Heimberg, 2018; Tran & Rimes, 2017). While the suppression scale we used (WBSI) does not indicate whether or not a suppression experimental manipulation was successful, this could explain why we did not find rebound effects yet found overall suppression use was associated with higher negative but lower positive affect scores.

In paired *t*-tests, regardless of condition, participants did experience a significant subjective decrease in negative affect from Time 1 to Time 2, $t(157) = 3.63, p < .001$, and this finding is counter-intuitive and does not support our hypotheses. There were no significant changes in the positive affect scores, $t(157) = -.62, p = .53$. This could be in part due to the content of the eco-hackivism article, as participants expressed strong negative emotions in the open-ended questions. For instance, “I feel angry and disappointed at the damage corporations do to the environment. Disappointment but not surprised, since every other day there seems to be a story about how human consumption and capitalism has been prioritized at the expense of the little guy, or animals, or nature.” and “Anger at Welsh (sic) state, anger for the damage being done to Ireland from a foreign country's ignorance. Anger for damage to marine life and Environment to Irish coast. Anxiety of constant environmental pollution by states (sic).” These examples could indicate that the strong emotional reactivity towards the environmental polluting may have overridden the experimental manipulation. This could indicate that pre-existing beliefs could mediate affect changes with suppression. Future research could investigate these open-ended responses with content or thematic analysis to determine if expressions result in rebound effects.

Previous research has demonstrated that suppression leads to hyperaccessibility of what is trying to be suppressed, creating a rebound effect (Wegner, 1992). Thus, expression should create the opposite effect with a “release” that should prevent or at least minimize the rebound effects. There are two areas of research that have contrasting findings about emotional expression. The first is longitudinal health psychology and psychiatry that has found that expressing one’s emotions predicts better health outcomes and less mortality (Patel & Patel, 2019; Chapman, 2013). However, experimental and some clinical research have found the opposite where “venting” anger (forcefully expressing one’s emotions) has led to rebound effects and an actual increase in anger (Bushman, 2002; Lohr et al., 2007). These mixed findings could add an additional explanation to our results. Expressing one’s TFBs and emotions could in fact, at least in the short term, lead to those TFBs and emotions being more salient at the post-task

measures. This then could have eliminated any differences with the rebound effects between the conditions. One experimental study did examine if suppression rebound could last longer-term for ethical decision making (Yam, 2018). They found that longer-term (24 hours after suppression instructions) that participants did experience rebound effects. Yam also found that suppression could have positive effects by decreasing unethical decision making after participants suppressed ethical and moral content. For the current study, this raises the question if expression or venting may have short-term negative impacts (e.g., increased negative affect) but long-term benefits, and this needs further investigation.

Lastly, we may not have been able to replicate suppression and rebound effects could be due to the fact that it had to be conducted online rather than in the laboratory due to COVID-19 restrictions. Despite standardized instructions, there was a significant loss of scientific control (e.g., environmental noise, different devices being utilized with presumably differing screen sizes) that previous research maintained. It could also be that with the online format, the manipulation instructions were not salient enough to compensate for this lack of scientific control. An additional experimental factor to consider is the word search's cognitive load. In the open-ended questions to assess the participants' subjective experience of the experiment, participants stated that they were able to focus on the word search and forget their thoughts or feelings about the article due to the concentration needed to complete the word search. Future research could investigate if a distraction, like the word search, could be effective to avoid rebound effects. As this was the first to be conducted online in this area, there were lessons learned, and we discuss these next.

6.6.1 Lessons Learned for Future Research

There are several lessons learned from doing this suppression experiment in an online format that can inform future research.

Salience

Due to extraneous environmental factors that cannot be controlled during an online study, such as noise, visual distractions, different screen sizes, the manipulation instructions need to be repeated several times to ensure they are perceived by the participants.

Using Non-dominant Hand

It may be better to ask participants to have their cell phones open to an app, such as notes, where they can simply tap on the keyboard with their non-dominant hand every time they

experience a rebound effect, totaling them at the end. This would make the counts more accurate and less intrusive to the rest of the experiment.

Removing Hyperaccessibility in Expression Conditions

While we had hypothesized that participants in the expression condition would experience and report fewer objective and subjective rebound effects, the expression condition, which required participants to write their TFBs, may have led to the ideas being hyperaccessible. This then could have obscured or nullified the manipulation effects. Participants were quite detailed and often wrote a significant amount in the expression condition, making these TFBs more salient. We have two possible suggestions that could help avoid the hyperaccessibility for participants in the expression condition, thus trying to preserve the manipulation effects.

(a) For consistency within the condition, we would recommend a minimum of 40 but a maximum of 60 words be required. This should take approximately 1 to 1.5 minutes on either a cell phone or keyboard, as a new study found that the average texting speed was 38 wpm and 35-60 wpm on a physical keyboard (Aalto University, 2019). This will also balance out the amount of time each participant is expressing their TFBs, creating a more consistent amount of time within this condition and allow the time across conditions to be more equivalent as well.

(b) The second could be adding a downtime into the expression condition. With controlling the minimum and maximum word count, a 30-second pause could be added before going to the next step of the experiment (i.e., the word search), which is where the objective rebound measure is counted. This brief downtime may provide enough time for any hyperaccessibility and emotional effects from the writing to dissipate. In the current study, there was no pause for the expression condition while the control and suppression had a 105-second delay to try to ensure the times across all conditions were approximately equivalent. If the suppression and control conditions have the full 2-minute delay they were informed it could take for the next page to load, estimating that the expression condition will take approximately 1.5 minutes to complete, a 30-second downtime delay could be added to help dissipate any residual effects from the expression.

Reducing Cognitive Load During the Rebound Measure Task

Moving the word search (i.e., the task to allow time for the objective measure of rebound to be counted) to an online format seems to have increased the cognitive load it took to complete due to having to scroll up and down to complete it. By having a task with a significant cognitive

load, it could have been demanding enough to allow participants to focus on the task rather than being relaxed, and it is once people are relaxed, intrusive thoughts emerge. Participants did express that they did think about the article during the word search; however, quite a few also stated that the word search (often referred to as a crossword) held their attention. For instance, “Once I started the crossword puzzle, my focus shifted entirely on finding the words,” “I thought very little about the article during the crossword,” and “I didn’t concentrate on the article at all after I finished reading it. My entire focus was directed towards finishing the crossword puzzle as quickly as possible.” Several others indicated that they were trying to figure out the experiment and the link between the article and the word search: “I only had one thought at the end of the word search, as I was thinking what the correlation was between the article and the word search,” “I simply wondered what the activity had to do with the article,” and “What does the word search (sic) have to do with the article?” These differing cognitive focuses then could have affected or eliminated the experimental manipulation and also potentially impacted the objective (i.e., tick marks) and subjective rebound measures (i.e., PANAS scores). Therefore, it is important to have a simple task that takes enough time to allow the experimental manipulation to absorb and be measured while not causing much cognitive load that negates the manipulation. For a word search, the number of columns and rows should be fewer (e.g., fewer than 10 x 10) with only longer target words to find, as they are often easier to find. Rather than a word search, a word-stem completion task could be used, as they are simpler and easier to complete.

6.7 Conclusion

In this study, we investigated if asking participants to suppress or express (or no instructions) their TFBs about an eco-hacktivism article would impact the number of intrusive thoughts they experienced and affective changes post-reading. We found, regardless of condition assignment, that those who were more likely to use suppressive techniques reported higher negative but lower positive affect. We expected to find that those who were asked to suppress their TFBs about the eco-hacktivism article would experience more rebound effects, more negative emotions, and fewer positive emotions. However, we did not find these in our results. This may be in part due to the loss of scientific control with the online format, and we have discussed the lessons learned, such as the expression condition not having any downtime after writing their TFBs, along with the delay task (i.e., the word search) being too cognitively challenging. One aspect that our results raises is if expression and venting are equivalent and

where the line between the two lies, as this could have clinical and interventional implications. At present, there is a gap in that literature, and future research should tease that apart.

6.8 Overall Chapter Conclusions

In Study 2, I investigated if participants would experience rebound effects objectively (counting the number of unwanted intrusive thoughts) and subjectively (having a decrease in positive and increase in negative affect) based on random assignment. There were three conditions: suppression, expression, and control (no instructions). Reading an article on a state-owned company dumping plastics into the water and eco-hacktivism did impact affect; however, I was unable to replicate what other researchers had found with intrusive thoughts while they were in the laboratory. I have discussed avenues to improve the research design for online formats. In Chapter 9, I discuss how the findings from this study align with the overarching research aim of this thesis.

The implementation of Study 2 was negatively impacted by COVID-19. The nature of the impacts and changes to the original design of the studies in this thesis are discussed in the Limitations' section in Chapter 9. Briefly, Study 2 was originally designed to be conducted in-person in the laboratory. However, to adhere to COVID-19 restrictions and public health guidelines, this study had to move to an online format. The vignette from Study 1 (Chapter 5) was retained, but due to the loss of experimental control that would occur at the expense of the new online format, I first wanted to pilot and investigate if I could get objective and subjective rebound effects in the suppression condition. Thus, in Study 2, I wanted to measure if randomly assigned participants who were asked to suppress, express, or in a control group with no instructions would experience subjective and objective rebound effects. To compensate for the already complex design, I decided to exclude the morality and crowdfunding questions to focus solely on the suppression effects. If the suppression effects could be detected, as others have found with in-person experiments, the experiment would be run again minus the objective and subjective measurements, and include the morality and crowdfunding questions, based on Study 1's results to measure bystander support for extremist behavior.

Ultimately, the lack of experimental control in the online format due to COVID-19 restrictions was not conducive to this experimental design. Thus, I had to pivot the design to adhere to the public health restrictions while still testing aspects of my suppression-incongruence model. In the next study, Study 3, I investigate dispositions that have a theoretical underpinning

to engage in regular suppression use, have an increased proclivity for antisociality, and may be more sensitive to incongruence. Study 3 will investigate how these could influence a participant's willingness to support real-world extremist behavior in terms of SSE.

Chapter 7

7.0 Study 3: Dark Personalities and Their Sympathies towards State-sponsored Extremism

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7.1 Abstract

There is little empirical research conducted on state-sponsored extremism (SSE). Yet, SSE can be seen in society from policy to policing that can lead to discrimination and aggression. The purpose of the study was to investigate if those higher on the Dark Tetrad (D4; Machiavellianism, narcissism, psychopathy, and sadism) and right-wing authoritarianism (RWA) would demonstrate more support for SSE. We hypothesized those who were higher on the D4 and RWA would show more sympathy towards SSE. We also investigated if cognitive suppression use could predict more support for SSE scenarios. In a cross-sectional design with vignettes, participants indicated their level of agreement with four real-world examples of SSE. A total of 398 participants (287 women, 103 men, six non-binary, and two who did not indicate gender) from 43 countries were recruited online. We ran a series of hierarchical regressions to develop predictive models to test our hypotheses. Being higher on RWA was a significant predictor that explained the most variance in nearly all models. Being higher on the D4 also predicted more support for SSE in select circumstances. Our findings contribute to the understanding of dispositional dynamics and interpersonal differences in the legitimization of SSE.

Keywords: state-sponsored extremism, Dark Triad, Dark Tetrad, right-wing authoritarianism

7.2 Introduction

There has been a global movement towards right-wing populist style governments over the past decade. Right-wing populism, as seen in Brexit and recent Turkish and Polish elections, tends to be anti-globalization and anti-immigration while being more nationalistic and authoritarian (Merelli, 2019). Right-wing governments tend to have more aggressive leadership and policies to preserve or re-instate their nationalistic “pride” (Blee & Creasap, 2010) with antagonistic rhetoric (Lammers & Baldwin, 2020). These governments often target already marginalized segments of the population, increasing tensions, divisiveness, and conflict, often leading to an increase in violence and state-sponsored extremism (SSE; Sandel, 2018). There are no universally accepted definitions of SSE (see Sotlar, 2004 for a discussion on the difficulties of defining extremism). For this paper, SSE is defined as a situation where a state officially supports or partakes in violent and/or non-violent actions that attempt to harm (physically or psychologically) another state or its own residents or citizens but outside formally declared war.

There are numerous forms of extremism from ecoterrorism, right-wing radicalization, political extremism, to genocide. Previous research has found perpetrators (i.e., active actors) and sympathizers (i.e., passive actors who tolerate/support the perpetrators) of one form of violent extremism have attributes that will differ from perpetrators of another form (Clemmow et al., 2020; Boylan, 2015). For example, in a Flemish sample, those who engaged in political violence were found to be less socially integrated in that society (De Waele & Pauwels, 2014). The focus of this paper is attitudinal support for SSE and traits that may explain individual differences in support for SSE.

7.2.1 Dark Tetrad and Extremism

There have been decades of research that have shown that those high on the Dark Tetrad (D4; Machiavellianism, narcissism, psychopathy, and sadism) are more likely to aggress when a situation presents itself albeit with different triggers (Buckels et al., 2013; Jones & Paulhus, 2011, 2010; Jonason & Webster, 2010. See Paulhus & Williams, 2002 for an overview of the etiology of the D4 and how the traits differ from clinical diagnoses). While research has shown the D4 share a conceptual resemblance, each trait has distinct facets and adds to the construct of the so-called ‘dark personality’ (Buckels et al., 2013; Jones & Paulhus, 2011). Those high on Machiavellianism tend to manipulate in a cold, callous manner and only aggress if they perceive the benefits to outweigh the costs with no fear of being caught or retaliated against (see Tetreault

et al., 2021 for a table that outlines the key attributes of the D4 traits and the triggers). Core traits for those who are higher on narcissism demonstrate a sense of superiority and entitlement. While they only aggress in response to an ego threat (e.g., criticism of their work or social identity; Jones & Neria, 2015), they are hyperaware of ego threats and can perceive innocuous encounters as slights, triggering an aggressive response. People who are high on psychopathy demonstrate anti-social behavior and high impulsivity with low anxiety and empathy. They use violence instrumentally (i.e., act aggressively to achieve a goal) when it is low cost to themselves (Buckels et al., 2013). Lastly, the main core trait for those high on sadism is enjoying others' suffering (*schadenfreude*). Those high on sadism aggress in any opportunity even if unprovoked or at a high cost to themselves, showing aggression is often the chosen behavior (Jones & Paulhus, 2010). Studies have found that those higher on sadistic traits, for example, show an increase in positive affect while aggressing and a decrease in positive affect when they were not (Buckels et al., 2013), suggesting they enjoy aggressing. The D4's attributes potentially increase the likelihood of engaging in and sympathizing with perpetrators in differing forms of violent extremism, including SSE. In the current study, we hypothesize that those higher on the D4 traits will report more support for SSE.

Studies have investigated the D4 and the relationship between these traits and extremism, but the findings have been mixed. For example, in a French undergraduate sample of women, using cluster analysis, the psychopathic, sadistic, and Machiavellianistic trait cluster was found to be more associated with more radicalized cognitions and behavior (Chabrol et al., 2020). Morgades-Bamba et al. (2020), in a study of radicalized women, found that the D4, in particular being high on sadism, was associated with having radicalized cognition, whereas being high on narcissism was associated with radicalized behavior. Broadly, Machiavellianism and psychopathy have been associated with more direct anti-social behavior and justifications for it (Klimstra et al., 2014), narcissism and sadism have been directly associated with negative attitudes towards immigrants (Petrovi , 2019), and all D4 traits have been associated with a devalorization of others (Chabrol et al., 2020).

McGregor et al. (2015) reviewed how being high on the D4 traits may predispose people to violent radicalization. For Machiavellianistic traits, the authors postulated the core traits of low morality coupled with the high drive for power and authority could lead to radicalization. Narcissistic traits of feelings of being unjustly treated, aggressive reactions to perceived slights

or discrimination, and devaluing others may contribute to radicalized beliefs and sympathies towards perpetrators. The remaining two psychopathic (low empathy, anti-social behavior, and callousness) and sadistic (enjoying other's suffering) traits of the D4 could cause people high on the traits to engage in certain forms of violent radicalization and have positive regard for perpetrators of radicalization.

These findings point to the potential value of conducting further empirical research into the relationship of the D4 traits and extremism, and this is an aim of the current study. As we are investigating attitudes and sympathies towards those who support SSE in the current study, we hypothesize that the D4 will show more agreement. While previous literature has shown that the D4 do link to various forms of extremism, there are gaps in the literature that we aim to address as well. There is a tendency to rely on student samples, and these samples may not be reflective of society at large. Some have used other samples, such as soldiers (e.g., Lindén et al., 2019), but they are not common. In extremism research, there is more focus on individual perpetration with very little on SSE, which is in part why we focused on SSE. Lastly, some researchers still exclude sadism in their research and focus on the Dark Triad. Research has demonstrated that those high on sadism are particularly aggressive and even work to inflict pain and violence because they enjoy it (Chester et al., 2019). We suggest sadism could be an important trait that is associated with more sympathies towards SSE and, as such, have included it in the current study.

7.2.2 Right-wing Authoritarianism and Extremism

Right-wing authoritarianism (RWA) is a concept originating from the 1950s (Adorno et al., 1950). RWA has received a lot of attention in research, and it has developed into a stable construct for individual differences and attitudinal beliefs (Bizumic et al., 2009). Being high on RWA is associated with favoring traditionally socially conservative values, adherence to laws, and punitive punishments for breaking conservative values and norms (Duckitt, 2010). Those high on RWA lean towards 'Right' conservative parties, favoring strict immigration policies, nationalism, and ethnocentrism. In contrast, those low on RWA lean towards 'Left' liberal and progressive parties, favoring diversity and more lenient immigration policies while disagreeing with nationalism and militarism. Additionally, those high on RWA tend to be more likely to view the world through in-group/out-group eyes, where out-groups are seen as threatening to their way of life (Altemeyer, 1998; Whitley, 1999). Furthermore, those high on RWA tend to view their way of life and their in-group as morally superior, which justifies in their eyes

expressions of prejudice against an out-group who is either deemed directly by them or authorities as being or behaving as inferior (Altemeyer, 1998; Whitley, 1999). Such findings concord with studies that suggest that people who are higher on RWA may have more negative attitudes against same-sex couples (Whitley, 1999) and immigrants (Craig & Richeson, 2014), while simultaneously showing tolerance and support of unethical war behavior (Lindén et al., 2016) and aggressive behavior from authorities (Altemeyer, 1998). All these factors could culminate into a RWA disposition that would demonstrate sympathies towards the SSE we are investigating in the current study.

RWA has some characteristics that are also found in the D4 (e.g., lower empathy, want of power), yet RWA and the D4 also tap in to different facets of dark traits (Lindén et al., 2019; Zeigler-Hill et al., 2020). For instance, narcissism was the only D4 trait found to be weakly, positively associated with RWA ($r = .17$ or $.26$, $p < .001$) in two different samples: one an American undergraduate sample, and the other a mix of an American undergraduate sample and adults recruited through Mechanical Turk (Zeigler-Hill et al., 2020). However, in a study of Swedish soldiers, Machiavellianism ($r = .27$, $p < .001$) and psychopathy ($r = .31$, $p < .001$) were positively correlated with RWA (Lindén et al., 2019). In that study, those high on the Dark Triad and RWA along with the dominance aspect of social dominance orientation contributed to creating a latent ‘core of darkness’ personality that predicted both unethical warzone behavior and support for unethical behavior within the military organization. These findings also suggest that, while there are shared features between RWA and the D4, there are distinctive aspects that need to be further understood in how they relate with extremist thoughts, support, and/or behavior in order to counteract them. Thus, the current study seeks to explore the relationship between the facets of the D4 and RWA, and their predictive power of support for SSE.

7.2.3 Dark Tetrad, Right-wing Authoritarianism, and Suppression

The research on the D4 has demonstrated that the D4 tend to ‘release’ their aggressive tendencies in a variety of situations, such as killing bugs (Buckels et al., 2013), blasting white noise (Chester et al., 2019), and intimate partner violence (Tetreault et al., 2021). We are proposing based on this tendency to ‘release’ aggressive behavior in select situations according to the aforementioned unique triggers that there is an underlying theoretical supposition for those who are high on the D4 regularly to engage in suppression. This habitual suppression of aggressive behavior then acts as a coping strategy that allows people higher on D4 traits to

function more easily within society than their clinical counterparts. While suppression has been shown to be a useful short-term coping strategy, it is not an effective long-term strategy (Mund & Mitte, 2012; Geraerts et al., 2006) as we discuss more below. No research to the best of our knowledge has been conducted to determine if those higher on the D4 use suppression. We aim to fill this gap.

For RWA, there is no theoretical background on the use of suppression in the same manner as the D4, but there have been a few studies that investigated suppression and RWA. One study found that RWA was not correlated with either externally or internally motivated suppression (Webster et al., 2014). They did not examine suppression and RWA in their other analyses. However, other research found that more antisocial attitudes emerged for those who were higher on RWA when external influences (e.g., threatening situations) mediated by beliefs the world was dangerous were present (Duckitt & Fisher, 2003). This could indicate that those higher on RWA may be suppressing antisocial thoughts, feelings, beliefs, or behavior in certain atmospheres and not in others. The study did not investigate if these effects were retained long term nor if there were any negative effects of the suppression.

If people higher on the D4 and RWA do consistently suppress their behavior to cope and fit in better with societal norms, we believe this could lead to rebound effects through hyperawareness. Rebound effects—an increase in the thoughts, feelings, or behaviors one is actively trying to suppress—have been shown to be a long-term effect of suppression (Wegner et al., 1987). We have theorized that long-term suppression of thoughts, feelings, or behaviors creates a hyperawareness to find situations to ‘release’ what is trying to be suppressed (i.e., rebound). The hyperawareness could lead to seeking out situations to aggress or support aggression. We argue that this hyperawareness results from the incongruence between their authentic selves (e.g., wanting to aggress) and the behavior they are ‘forced’ to suppress to align with societal norms. Thus, suppression leads to a sense of incongruence between how one wants to behave and how one feels they can behave, leading to rebound effects by creating a hyperawareness to find a way to release their natural propensities. In other words, people who are more susceptible to behaving or responding aggressively, such as those higher on the D4 or RWA, will look for opportunities to do so or interpret ambiguous situations as times to react aggressively. While aggressing, those high on the dark personalities are no longer suppressing, which could dissipate the effects from the rebound effect (i.e., their behavior and thoughts are

congruent). For example, someone who is high on sadism may become hyper vigilant to find opportunities to inflict pain, such as cyberbullying (van Geel et al., 2017). We examined if those higher on the D4 and RWA engaged in suppression and if suppression could predict more support for SSE (i.e., rebound), as this is missing from the literature.

7.3 Research Questions and Hypotheses

There were two main research questions: **(RQ1)** which factors and traits could predict passive support of SSE? **(RQ2)** Could those who score higher on the D4 and RWA be at greater risk of sympathizing and showing more support for SSE? There are four main overarching hypotheses: Machiavellianism and narcissism will be positively correlated with RWA; whereas psychopathy and sadism will be negatively correlated with RWA (**H1**). Higher scores on the D4 and RWA will be associated with higher use of suppression (**H2**). Higher scores on RWA and the D4 will predict more agreement with SSE with each vignette garnering support from people higher with different traits (**H3**; see Table 7.1 for sub-hypotheses for each SSE scenario). More suppression use will predict more agreement to SSE (**H4**). While we did not hypothesize age, gender identification, education level, or whether currently living in the same country as one grew up would be significant predictors of support for any SSE, they were important to include. Research has shown that younger males tend to be more aggressive against others (Moffit, 2001). Additionally, as some of the vignettes included SSE that specifically targeted immigrants, it was important to include whether or not participants were living in the country they grew up in in case this aspect influenced how they indicated support (or not). The only demographic variable we hypothesized to be a significant predictor was self-placement on the political spectrum. We hypothesized more right-leaning on the political spectrum would show support in the same pattern as those higher on RWA.

Table 7.1

H3 Sub-hypotheses for Support of the Four SSE Scenarios

	SSE 1 (Violence against Protesters)	SSE 2 (Use of Arms against another Country)	SSE 3 (Reversed, Volunteers Saving Refugees)	SSE 4 (Law Forcing Indoctrination)
Higher Machiavellianism	Will predict more support. Rationale: due to the want of power with little risk of being caught.	Will predict more support. Rationale: due to the want of power.	Not hypothesized to be associated.	Not hypothesized to be associated.

Higher Narcissism	Not hypothesized to be associated.	Not hypothesized to be associated.	Not hypothesized to be associated.	Will predict more support. Rationale: not assimilating could be perceived as a threat to identity, which could trigger a response.
Higher Psychopathy	Will predict more support. Rationale: due to the use of physical instrumental violence.	Will predict more support. Rationale: due to the use of physical instrumental violence.	Not hypothesized to be associated.	Not hypothesized to be associated.
Higher Sadism	Will predict more support. Rationale: due to the fact people would be harmed.	Will predict more support. Rationale: due to the fact people would be harmed.	Not hypothesized to be associated.	Not hypothesized to be associated.
Higher RWA/More Right-leaning on the political spectrum	Will predict more support. Rationale: favor more traditional or aggressive actions against out-groups.	Not hypothesized to be associated.	Will predict less support (or more against). Rationale: volunteers assisting 'illegal' immigration and higher RWA/Right leaning tend to be anti-immigration.	Will predict more support. Rationale: tend to be less open about immigration and immigrants especially if immigrants are perceived as not assimilating.
More Suppression Demographic (age, gender, education, living in same country as grew up)	Will predict more support.	Will predict more support.	Will predict more support.	Will predict more support.
	Not hypothesized to be associated.	Not hypothesized to be associated.	Not hypothesized to be associated.	Not hypothesized to be associated.

7.4 Methods

7.4.1 Participants and Procedure

In this cross-sectional study, participants provided demographic information, then read four vignettes on SSE with two to three sub-questions each (see Appendix C.1). The vignette presentation was randomized to avoid any order effects. The next section contained the Short Dark Triad (SD3) and Short Sadistic Impulse Scale (SSIS) with all items being randomized. The Right-wing Authoritarianism scale and White Bear Suppression Inventory (WBSI) were the last two sections. Within each of those, the items were randomized. Participants were asked to place themselves on the left-right political spectrum on an 11-point Likert scale with 1 being

completely liberal, 6 being neither left nor right, and 11 being completely conservative (based on Kroh's [2007] and Vegetti & Širini 's [2019] recommendations). Participants were lastly asked if they wished to receive course credit or enter a draw for a gift card. Full ethical approval was granted by the Research Ethics Committee at NUIG before online data collection through social media and the human subject pool commenced.

There were a total of 404 participants with 398 participants⁶ (287 women, 103 men, 6 non-binary, and 2 who preferred not to indicate how they identified) being retained for analyses. There were numerous univariate and multivariate outliers in our data. For instance, selecting a 2 on the 10-point Likert scale for SSEs was enough statistically to have participants identified as extreme outliers. Upon inspection of the standardized residuals of all variables, we determined the residuals were within the expected distribution parameters, and no participants were removed for being outliers.

The average age of the participants was 32.75 ($SD = 12.52$, range 18 – 78). The majority identified as being White (85.2%); other, including mixed race (7.8%); Asian (5.5%); Black (1.3%); or White Irish Traveler (.3%). Participants grew up in 43 different countries with Ireland ($n = 198$), Canada ($n = 73$), and United States ($n = 39$) representing the three most indicated.⁷ The participants were currently living in 24 different countries with Ireland ($n = 257$), Canada ($n = 43$), United States ($n = 30$), and Sweden ($n = 28$) being the top four. For the highest level of completed education: 5.5% had completed a PhD, 33.4% a Master's degree, 32.4% an undergraduate degree, 27.5% high school, and 1.0% some high school. In terms of placement on the 11-point political spectrum, the mean was 3.79 ($SD = 1.97$).

7.4.2 Measures

To measure participants' level of agreement to SSE, participants were asked to read four vignettes that were closely based on real-world examples (see Appendix C.1) and indicate their level of agreement on 10 sub-questions on a 10-point Likert scale (1 – not at all to 10 – completely). The four vignettes investigated four types of SSE: violent SSE, financially supporting SSE, non-violent SSE, and political policies that could instigate SSE. The first vignette was inspired by the 2020 US election and other countries who have used their military or police forces to ensure the incumbent government is re-elected, regardless of how much

⁶ Six participants were removed from analysis for providing nonsensical answers (e.g., creating a country name).

⁷ For the participants who indicated they grew up in several countries, we used the one they listed first.

violence is necessary to examine support for violent SSE. Vignette 2 was Canada's arms' deal with Saudi Arabia, where Canada is selling arms to Saudi Arabia for large financial gains while Saudi Arabia is using these arms to target Yemen to gain control over the area (Guardian, 2020), investigating support for intergovernmental agreements that financially support SSE. Vignette 3 was regarding Italian volunteers who go into the Mediterranean to rescue migrants from ships that are in distress and take them to larger ships that then take them either to Greece or Italy (Trilling, 2020), examining support for non-violent SSE (reverse scored). Vignette 4 was Denmark's law (LOV nr 1322 af 27/11/2018) that forces babies of immigrants who are living in 'ghettos' starting at the age of 1 to attend 25 waking hours per week of assimilation education to ensure they adopt Danish culture and values (Barry & Sorensen, 2018) to explore political policies that could instigate SSE. The countries' names were removed to prevent any pre-existing bias.

We used two scales to measure the D4 personalities. The first was the SD3 (Jones & Paulhus, 2013), a 27-item scale, consisting of three subscales, Machiavellianism, narcissism, psychopathy, each containing nine items. Participants were asked to indicate their level of agreement to each statement on a 5-point Likert scale, ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Some examples are: 'I like to use clever manipulation to get my way,' (Machiavellianism subscale, $\alpha = .75$); 'I insist on getting the respect I deserve' (the narcissism subscale, $\alpha = .66$); and 'Payback needs to be quick and nasty' (psychopathy subscale, $\alpha = .63$). We used the SSIS (O'Meara, Davies, & Hammond, 2011, $\alpha = .83$), which consists of 10 items (e.g., 'I enjoy seeing people hurt'), scored from 1 (strongly disagree) to 5 (strongly agree).

The Short-version Right-wing Authoritarianism (Rattazzi et al. 2007, $\alpha = .84$) is a 14-item scale, asking participants to rate their agreement on a 7-point Likert scale with -3 (totally disagree) to +3 (totally agree). 'Obedience and respect for authority are the most important values children should learn' is an example item. To assess people's natural suppression tendency, the WBSI (Wegner & Zanakos, 1994, $\alpha = .93$) was used. Participants rated their level of agreement on a 5-point Likert scale (1 – strongly disagree to 5 – strongly agree) on 15 items, such as 'My thoughts frequently return to one idea'.

7.5 Results

In bivariate correlations, we found the D4 all significantly positively correlated (ranging from weak to strong) with one another (see Table 7.2). RWA was weakly positively correlated

with Machiavellianism and narcissism. Suppression was also weakly positively correlated only to Machiavellianism, psychopathy, and sadism.

Table 7.2

Correlations between the Dark Tetrad, RWA, and Suppression Tendencies

	Mach.	Narcissism	Psychopathy	Sadism	RWA
Narcissism	.34**				
Psychopathy	.47**	.25**			
Sadism	.45**	.20**	.64**		
RWA	.15*	.15*	.06	.09	
Suppression	.25**	.00	.25**	.24**	-.03

* $p < .01$ ** $p < .001$ Correlation is significant at the .01 level (2-tailed). Mach. = Machiavellianism

7.5.1 State-sponsored Extremism

We are presenting the analysis for four sub-questions (see supplemental material for the others), one from each vignette. Unfortunately, there were too few participants who identified as non-binary or who preferred not to indicate their gender to include them in the regression analyses. RWA and where people would place themselves on the political spectrum were strongly positively correlated ($r = .583, p < .001$). However, they were not strongly correlated enough to cause multicollinearity issues in the regression analyses, and as such, both were included in the models (Tabachnick et al., 2007).

Our DVs were not normally distributed. While transformations improved the skewness and kurtosis, they did not normalize the data. There were no obvious patterns in the residuals to suggest homoscedasticity violations. To ensure no data points were having undue influence, we examined Cook's distance. All were deemed acceptable (i.e., < 1.0 ; Tabachnick et al., 2007). No data points had both high leverage and Cook's distance, thus, we used the raw data.

We ran a series of hierarchical regressions to determine the variables that predict support for the scenarios. In model 1, the demographic and background variables: gender identification, age, education level, and living in the country where they grew up or not, and the political spectrum placement were included. Model 2 added Machiavellianism, narcissism, psychopathy, sadism, and RWA. In the final model, suppression (measured by the WBSI) was added. The model construction is in line with the theoretical background and our hypotheses.

7.5.2 Vignette 1 –Agreement with the Army’s Actions to Use Force to End Political Protests

All three models had significant changes, $F(5, 384) = 10.215, p < .001$ (model 1); $F(5, 379) = 6.113, p < .001$ (model 2); and $F(1, 378) = 6.603, p = .011$, (model 3; see Table 7.3). In the final model, 17.4% (adjusted R^2) of the variance was explained with being younger and more right-leaning on the political spectrum, higher sadism and RWA, and less suppression being significant predictors for support of the army’s use of violence against the protesters.

Table 7.3

Coefficients for Agreement with Army’s Actions to Use Force to End Political Protests

Model	1*				2*				3**			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.44	.17	-.12	.01	-.13	.18	-.04	.48	-.01	.18	.00	.95
Age	-.01	.01	-.10	.05	-.01	.01	-.10	.04	-.02	.07	-.14	.01
Education	-.16	.09	-.09	.07	-.09	.08	-.05	.31	-.10	.08	-.06	.24
Same country	.15	.17	.04	.39	.15	.17	.04	.37	.15	.17	.04	.36
Pol. Spectrum	.23	.04	.28	<.001	.16	.05	.20	.001	.16	.05	.20	.001
Mach.					-.01	.02	-.04	.51	-.01	.02	-.02	.73
Narcissism					-.02	.02	-.07	.19	-.03	.02	-.08	.10
Psychopathy					.03	.02	.09	.18	.04	.02	.11	.09
Sadism					.07	.02	.20	.002	.08	.02	.23	<.001
RWA					.02	.01	.15	.01	.02	.01	.15	.01
Suppression									-.02	.01	-.14	.01
R^2				.117				.183				.197
Adjusted R^2				.106				.162				.174

* $p = .001$ ** $p < .01$

7.5.3 Vignette 2 – Middle Eastern Country’s Use of Arms to Control Neighboring Area

In the regression, models 1 and 2 had significant changes, $F(5, 384) = 4.051, p = .001$; $F(5, 379) = 3.712, p = .003$; and $F(1, 378) = .170, p = .68$ for model 1, 2, and 3 respectively (see Table 7.4). More right leaning and higher narcissism were the only significant predictors in every model in which they were included, explaining 6.9% of the variance in the final model. This is the only DV where RWA was not a significant predictor though it neared significance.

Table 7.4

Coefficients for Agreement with Middle Eastern Country’s Use of Arms

Model	1*				2**				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Predictor												

Gender ID	-.13	.13	-.05	.30	.02	.13	.01	.89	.03	.14	.01	.81
Age	.00	.01	-.03	.59	.00	.01	-.01	.83	.00	.01	-.02	.75
Education	-.03	.06	-.02	.68	.00	.06	.00	.99	.00	.06	.00	.97
Same country	-.10	.13	-.04	.43	-.04	.13	-.02	.75	-.04	.13	-.02	.75
Pol. Spectrum	.12	.03	.21	<.001	.07	.04	.13	.04	.07	.04	.13	.04
Mach.					.00	.01	.02	.78	.00	.01	.02	.74
Narcissism					.03	.01	.11	.03	.03	.01	.11	.04
Psychopathy					.02	.02	.06	.35	.02	.02	.07	.33
Sadism					.02	.02	.07	.32	.02	.02	.07	.30
RWA					.01	.01	.11	.06	.01	.01	.11	.07
Suppression									.00	.01	-.02	.68
R ²			.050				.094				.095	
Adjusted R ²			.038				.071				.069	

* $p = .001$ ** $p = .003$

7.5.4 Vignette 3 - Disagreement with Volunteers Rescuing Migrants in the Mediterranean

The models with significant changes were model 1, $F(5, 384) = 11.028, p < .001$, and model 2, $F(5, 379) = 8.897, p < .003$ (see Table 7.5). Model 3 was non-significant, $F(1, 378) = .075, p = .785$. A total of 19.5% (adjusted R²) of the variance was explained. The significant predictors were higher education, Machiavellianism, and RWA.

Table 7.5

Coefficients for Disagreement with Volunteers Rescuing Migrants in the Mediterranean

Model	1*				2*				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Predictor												
Gender ID	-.53	.24	-.10	.03	-.28	.25	-.06	.26	-.27	.26	-.05	.30
Age	.01	.01	.04	.42	.01	.01	.07	.12	.01	.01	.07	.16
Education	.32	.12	.13	.01	.42	.12	.17	<.001	.41	.12	.17	<.001
Same country	-.26	.24	-.05	.29	-.15	.23	-.03	.53	-.15	.23	-.03	.53
Pol. Spectrum	.33	.05	.29	<.001	.11	.06	.09	.10	.11	.06	.09	.10
Mach.					.09	.02	.20	<.001	.09	.02	.20	<.001
Narcissism					.01	.02	.02	.68	.01	.02	.02	.71
Psychopathy					-.03	.03	-.06	.38	-.03	.03	-.05	.41
Sadism					.02	.03	.05	.43	.02	.03	.05	.42
RWA					.05	.01	.27	<.001	.05	.01	.27	<.001
Suppression									.00	.01	-.01	.79
R ²			.126				.217				.218	
Adjusted R ²			.114				.197				.195	

* $p < .001$

7.5.5 Vignette 4 – Agreement with ‘Educating’ Babies to European Values Being Implemented

For this analysis, model 1 ($F[5, 384] = 11.931, p < .001$) and 2 ($F[5, 379] = 7.313, p < .001$), had significant changes (see Table 7.6). Model 3 did not $F(5, 378) = 2.216, p = .14$. The explained variance was 19.2%. The three significant predictors were more right-leaning on the political spectrum, higher psychopathy, and higher RWA.

Table 7.6

Coefficients for Agreement with “Educating” Babies to European Values Being Implemented

Model	1*				2*				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.65	.18	-.17	<.001	-.35	.19	-.09	.06	-.28	.19	-.08	.14
Age	-.01	.01	-.08	.11	-.01	.01	-.05	.28	-.01	.01	-.07	.14
Education	-.08	.09	-.04	.38	.00	.09	.001	.99	-.01	.09	.00	.95
Same country	-.28	.18	-.08	.12	-.20	.17	-.05	.25	-.20	.17	-.05	.25
Pol. Spectrum	.25	.04	.30	<.001	.14	.05	.16	.004	.14	.05	.16	.004
Mach.					.02	.02	.07	.25	.02	.02	.08	.19
Narcissism					.01	.02	.04	.46	.01	.02	.03	.58
Psychopathy					.06	.02	.15	.02	.06	.02	.17	.01
Sadism					.00	.02	.01	.85	.01	.02	.03	.67
RWA					.03	.01	.22	<.001	.03	.01	.22	<.001
Suppression									-.01	.01	-.08	.14
R ²		.134				.211				.215		
Adjusted R ²		.123				.190				.192		

* $p < .001$

7.6 Discussion

The aim of the current study was to investigate the predictive power of the D4 and RWA traits and suppression on different types of real-world examples of SSE. While the dark personalities (Tetreat et al., 2021) and RWA (Lindén et al., 2016) have been linked to aggression and extremism, we cannot assume they will predict SSE in the same manner.

The bivariate correlations (**H1**) support the previous research that demonstrated that the D4 are correlated to varying degrees, highlighting they have overlap yet remain distinct traits (Buckels et al., 2013; Jones & Paulhus, 2013). In our sample, there were two correlations that are noteworthy, the weaker correlation between narcissism and psychopathy ($r = .25$ in our sample

versus .40 or .37) and the strong correlation between psychopathy and sadism ($r = .64$ in our sample versus .44 or .48), as they seem to differ from previous findings (Buckels et al., 2013; Pineda et al., 2021, respectively for each correlation). This needs further investigation; however, one explanation could be due to our sample being more of a multinational sample compared to undergraduate university student samples that are prevalent in previous research. This raises the question if there are potential cultural influences in the measurement of everyday sadism and psychopathy. The vast majority of research using the SD3 and SSIS have been used on North American and European samples, and even between North America and Europe the internal reliability of the D4 scales has varied (Tetreault et al., 2021; Tetreault & Hoff, 2019). Trait manifestations are not always generalizable between cultures, and scales could require re-standardization to detect the different ways in which those traits present themselves in each culture (Cooke et al., 2005). This needs further investigation.

The hypothesis (**H1**) that RWA would be correlated to the D4 was partially supported. Machiavellianism was found to be in line with Lindén et al.'s (2019) finding that it was positively correlated with RWA, but psychopathy and sadism were not negatively correlated as predicted. In our sample, narcissism and RWA were also positively correlated; whereas in previous research there have been mixed results with some finding a correlation (Zeigler-Hill et al., 2020) and others not (Lindén et al., 2019). A core trait of psychopathy is loyalty only to oneself, *schadenfreude* for sadism's core trait, and RWA's core is adherence to conservative norms. Those who are higher on psychopathy and sadism may not care whether society is conservative or liberal, and as such, this could explain why no correlations were found between psychopathy, sadism, and RWA in our sample. At this stage in the research, the inconsistent findings between the D4 and RWA need more investigation. The discrepancies could be due to RWA being assessed by different scales, for instance. It would be good to investigate if there are cultural aspects to measuring RWA that could also account for some of the inconsistencies.

One of the theoretical underpinnings of the D4 is that those who are higher on those traits are able to function in society by suppressing their aggressive tendencies until they are triggered by specific situations. There is no previous research investigating suppression and the D4 and very little on RWA. In terms of suppression, our hypothesis (**H2**) was partially supported with Machiavellianism, psychopathy, and sadism being weakly, yet significantly, positively correlated with suppression proclivity. With items such as, 'Many group activities tend to be dull without

me' on the narcissism scale, it could demonstrate that those higher on narcissism do not suppress their thoughts or feelings. Additionally, a pervasiveness of self-enhancement while lacking personal insight are key elements for those higher on narcissism (Paulhus & Williams, 2002). This could indicate people with higher narcissism are not prone to or are unaware of suppressive tendencies. For those who are higher on RWA, with the prevalence and use of social media, researchers have found far-right posts have more engagement than center- or left-leaning posts (Edelson et al., 2021). This could mean that those high on RWA are emboldened and have no reason to engage in suppression under the current social and political climate.

7.6.1 Overall Findings for Predictors in Regression Analyses

Prior to discussing the specifics of each SSE scenario and examining explanations for our results, we will discuss some of the overall findings. We did not hypothesize there would be demographic or background variables that would be significant predictors of SSE. In the regression models, placing oneself on the political spectrum was the only regularly significant predictor. Self-placement on the political spectrum can be challenging to analyze and interpret in a multinational sample, as there is no objectivity to the scale. For instance, a 6 (being neither left nor right) would be perceived differently between Irish, Canadians, and Americans. While interpretation of the scale is not straightforward and conclusions need to be drawn with caution, we followed best practices based on previous researchers' findings to investigate the left-right spectrum. There were some models that had age (two models), gender (one model), and education (two models) as significant predictors. This is in line with previous research that has shown these variables often only explain little of the variance if any at all (Zmigrod et al., 2021).

Overall, we did find that those higher on the D4, but especially RWA, were more likely to support SSE in the varying scenarios (**H3**). However, as we see in our results for the individual vignettes discussed below, the D4 did not always show support in ways that were consistent with their triggers as hypothesized. This leads to the question of if SSE elicits different reactions in the D4 compared to violence and aggression in laboratory and other situations. This needs further exploration. However, our models do explain more of the variance than other models that have investigated extremism (Zmigrod et al., 2021), indicating that the dark personalities are more susceptible to supporting SSE. These results then add to the existing literature and should be considered in interventional work. While showing more sympathy/support towards SSE does not measure actual extremist behavior, it could demonstrate that those higher on the dark

personalities have more vulnerability to governmental justifications for violence, which could lead to more passive acceptance of the violence.

One aspect of these findings that needs further investigation is if not being triggered to support SSE is equivalent to suppressing aggressive propensities, as this could impact how interventions could be tailored to help people higher on the dark traits. Interventions could be aimed at preventing the expression of aggression or redirecting people towards more pro-social outlets. Even though suppression and some of the D4 were correlated (**H2**), suppression was not a significant predictor in our models save one, which was not in line with our hypothesis (**H4**). As this was a cross-sectional study, we measured suppression proclivities and not if suppression was actually used while the SSE scenarios were read. This then raises the question of whether suppression dispositions are sufficient in and of themselves to influence support for SSE by creating hyperawareness to find situation to show support for aggression as hypothesized.

We created and ran analysis on an aggregate score for the SSEs (see Supplementary Table 7.7), as it has the potential to assist with future research. However, it is important to note that the aggregate score removes the nuances of each type of SSE (support for non-violent SSE, violent SSE, intergovernmental agreements that financially support SSE, and political policies that instigate SSE). Based on the regression results we will discuss next, there are patterns of support (or not) for SSE. However, there are different predictors with varying explained variances in each vignette and sub-question, highlighting these nuances could be crucial in understanding each SSE form.

7.6.2 Support for Using Military to Stop Election Protesters

We had hypothesized that those higher on psychopathy (due to the use of instrumental violence), sadism (due to the tendency to enjoy harming others), RWA (due to the support of ‘traditional’ governments), and Machiavellianism (due to the want of power) would also be more likely to have higher sympathies towards the army’s actions (**H3**). As such, our findings partially support our hypotheses. Being higher on sadism and RWA were in fact significant predictors. While psychopathy is characterized by the use of instrumental violence (Jones & Paulhus, 2010), this scenario may not have directly related to them, thereby not being sufficient to garner support. It is surprising that those higher on Machiavellianism did not demonstrate support, especially considering the violent methods were successful, as they tend to hold the end justifies the means ideology (Buckels et al., 2013). This finding needs further examination. We had not

predicted demographic and background variables, save placement on the political spectrum, to be significant predictors. While younger people are often more likely to act aggressively (Moffitt, 2001), there have been stronger political movements by younger people (e.g., Hong Kong, Myanmar) fighting for democracy. Thus, younger people being in support of the use of violence by a military against political protesters was unexpected and needs further investigation.

7.6.3 Support for Using Weapons to Regain Control of a Neighboring Country

We had predicted that those who were higher on D4 traits, except narcissism, would be more likely to indicate support for the use of weapons against a neighboring country because of the use of physical aggression and the desire to gain power (**H3**). However, it was those who were higher on narcissism that were in fact more likely to predict being in support of this SSE scenario. It could be that those that are higher on narcissism are in support because of the ‘regain’ aspect, whereby the previous loss of control (i.e., self-entitlement) elicited the reactive support. We did not hypothesize that RWA would be a significant contributor to the model, and this is the only scenario where RWA was not significant. Interestingly, being more right leaning on the political spectrum did contribute significantly to the model. As we mentioned previously, participants’ placement on the political spectrum and RWA were significantly moderately correlated, however, not enough to cause multicollinearity issues. This could explain why the political spectrum placement is significant if it is tapping into only some aspects of RWA but not all of it. This needs further investigation to determine which parts of participants’ indications are correlating exactly with which aspects of RWA.

7.6.4 Not Supporting Volunteers Who Rescued Migrants in the Mediterranean

For those indicating less support for the volunteers who rescued migrants on boats, we found partial support for our hypotheses (**H3**) with those being higher on RWA, Machiavellianism, and education being significant predictors. Those who are lower on RWA would be more open to relaxed immigration policies (Duckitt, 2010), thus indicating more support for volunteers who are rescuing migrants from drowning is in line with the defining characteristics and our hypothesis. Being higher on Machiavellianism and having more education showing less support for the volunteers were unexpected findings. In terms of Machiavellianism, it could be those higher on the trait indicated less support for the volunteers’ actions if it had been perceived as weakening the power of the government. A core trait of Machiavellianism is a want of power, including political power, and these findings could be aligned with that (Paulhus

& Williams, 2002). One possible explanation for a higher level education showing less support for the volunteers could be that the vast majority of our sample had at least an undergraduate degree, indicating that the sample was still highly educated. These findings need more investigation to understand fully why less support for the volunteers was indicated for those with higher education.

7.6.5 Support for Babies Being Forced into ‘Education’ Classes in Your Country

We had expected that those who were higher on narcissism and RWA would indicate more agreement for the northern European government’s methods to be implemented in their own country (**H3**). While we did not anticipate those being higher on psychopathy to significantly contribute to this model, as they tend to engage and/or support actions that are goal-oriented and low-cost to themselves, it is logical that they would indicate support for this type of program. It is noteworthy, yet not unexpected, that being higher on RWA and being more right-leaning on the political spectrum were significant predictors. This type of policy is the crux of right-leaning political parties around the world as well as being anti-immigration, which would also appeal to those higher on RWA (Medovski & Bulut, 2017). We had hypothesized that those higher on narcissism would also indicate more support, as they tend to be in favor of acts when there is a (perceived) slight and not assimilating could be seen as a slight (**H3**). However, this was not the case. Those higher on collective narcissism, ‘an emotional investment in an unrealistic belief about the greatness of an in-group’ (de Zavala & Cichocka, 2011, p. 213), rather than the individual narcissistic trait of the D4 may be better at predicting support for this type of SSE, and future research should consider using collective narcissism in these scenarios.

These types of laws could incite extremist beliefs. In previous toxic situations, legislative actions to segregate and isolate different groups within a society led to citizens targeting the new outgroup with violence (Snyder, 1981). Most toxic situations are top-down (government initiated) and bottom-up (citizen initiated) when they are the most destructive and violent. These legislative moves of forcing babies into indoctrination schools are the beginning of a top-down approach (i.e., socially isolating and stigmatizing a specific marginalized group, creating an “us versus them” situation) that could lead to bottom-up extremism (i.e., aggressive discrimination or targeted hate). Attitude shifts precede behavioral ones, and as such, this could be an initial step in extremist attitude by a government.

While the legislation in Denmark is aimed at assimilating poor immigrants, the reverse could happen, where those having to give up their babies for 25 hours a week will feel less integrated into society, more aware of the discrimination, further isolating them, and perhaps leading to more extremist opinions/behavior. There is also evidence that demonstrates second generation immigrants partake in more anti-social behavior than the first generation (Vaughn et al., 2014). This type of legislation could be one of the first steps in leading to extremism for those who are being targeted by this program.

7.6.6 Limitations

This study is cross-sectional, and as such, causation cannot be drawn. While attitudes and intention do lead to behaviors, having positive attitudes towards extremism is not sufficient to lead to participating in violent extremism. Thus, with our data, it is not possible to determine if showing support for SSE is a predictor for extremist behavior. However, knowing that being higher on the D4 and/or RWA, especially, is associated with more support for SSE highlights a potential susceptibility, which could bring a different approach to interventions. While participants were from numerous countries, there were not enough participants per country to analyze country specific data.

7.7 Conclusion

Much of the focus in the literature and research on extremism tends to focus on individuals or groups committing violent extremist acts. There is less research on SSE, and with this study, we wished to investigate the D4's (Machiavellianism, narcissism, psychopathy, and sadism) and RWA's association with varying types of SSE. Overall, RWA was the best predictor and explained the most variance in the support indicated for the SSE. Those high on the D4 also demonstrated support but not in the same SSE scenarios. Our findings also add to the literature in that we found those who were higher on Machiavellianism, psychopathy, and sadism were also more likely to engage in suppression in their daily lives, which to the best of our knowledge has not been conducted previously. In terms of narcissism, one area that should be investigated is collective narcissism, as it may be better associated with SSE support, rather than the individualistic narcissism trait. It could also prove beneficial to investigate how collective narcissism relates to RWA to investigate factors that could indicate susceptibility to SSE justifications. Our findings, in their totality, could contribute to how dispositional differences and the acceptance of violence could inform counter-extremism interventions.

7.8 Supplementary Materials

In the supplementary materials, we are presenting the correlations between the sub-questions within each vignette, as interesting patterns emerged. Between the sub-questions in most vignettes, the correlations were not as strong as what was predicted. These correlation patterns warrant further investigation into how the nuances of state-sponsored extremism (SSE) are interpreted and garner support from individuals. We are also including all the regression analyses for the sub-questions in the vignettes that were not included in the manuscript.

Vignette 1A – Agreement with Leader’s Decision to Use Military Force to Stop Protests

The correlation between the support for the leader’s decision and the army’s action (in manuscript) in ending peaceful protests was a moderate positive correlation ($r = .57, p < .001$). In the regression analysis, two of the three models, model 1 and 2, had significant models, $F(5, 384) = 7.28, p = .001$; $F(5, 379) = 8.43, p < .001$; and $F(1, 378) = .18, p = .68$ for model 1, 2, and 3 respectively (see Supp. Table 7.1). Higher sadism and RWA were the only significant predictors in every model in which they were included. The final model explained 15.4% (adjusted R^2) of the variance.

Supplementary Table 7.1

Coefficients for Agreement with Leaders Decision to Use Military Force to Stop Protests

Model	1*				2*				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.23	.13	-.09	.07	.00	.13	.00	.98	.02	.13	.01	.90
Age	-.01	.01	-.09	.07	-.01	.00	-.08	.11	-.01	.01	-.08	.10
Education	-.05	.06	-.04	.40	.01	.06	.01	.90	.01	.06	.01	.91
Same country	.02	.12	.01	.90	.05	.12	.02	.66	.05	.12	.02	.66
Pol. Spectrum	.15	.03	.26	<.001	.06	.03	.10	.08	.06	.03	.10	.08
Mach.					.02	.01	.08	.15	.02	.01	.09	.14
Narcissism					-.01	.01	-.03	.61	-.01	.01	-.03	.57
Psychopathy					.01	.02	.04	.45	.01	.02	.05	.47
Sadism					.04	.02	.16	.01	.04	.02	.16	.01
RWA					.02	.01	.25	<.001	.02	.01	.25	<.001
Suppression									.00	.01	-.02	.68
R^2		.087				.178				.178		
Adjusted R^2		.075				.156				.154		

* $p < .001$

Vignette 2A – Agreement with the Arms’ Deal between Western and Middle East Country

All the sub-questions in Vignette 2 were positively correlated, though weak to moderate. The correlation between agreeing with the arms’ deal and the Middle Eastern country using the arms to gain control over the neighboring area (in manuscript) was $r = .32$ ($p < .001$). Whereas, the correlation between agreeing with the arms’ deal and agreeing with the Western country keeping the arms’ deal was $r = .50$ ($p < .001$). The correlation between the use of the arms (in manuscript) and support for the Western country keeping the arms’ contract was a positive moderate correlation ($r = .38$, $p < .001$).

The significant models were model 1, $F(5, 384) = 5.77$, $p < .001$, and model 2, $F(5, 379) = 2.36$, $p = .04$ (see Supp. Table 7.2). Model 3 was non-significant, $F(1, 378) = 2.31$, $p = .13$. A total of 19.5% (adjusted R^2) of the variance was explained. Being younger and higher on RWA were the significant predictors, showing more support for the arms’ deal between the Western and Middle Eastern countries.

Supplementary Table 7.2

Coefficients for Agreement with Arms’ Deal

Model	1*				2**				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.43	.17	-.13	.01	-.35	.18	-.10	.06	-.28	.19	-.08	.13
Age	-.01	.01	-.11	.04	-.01	.01	-.09	.07	-.01	.01	-.12	.03
Education	-.03	.08	-.02	.73	.00	.08	.00	.97	.00	.08	.00	.97
Same country	-.34	.17	-.10	.04	-.30	.17	-.09	.07	-.30	.17	-.09	.07
Pol. Spectrum	.14	.04	.18	<.001	.05	.05	.07	.24	.05	.05	.07	.25
Mach.					.01	.02	.05	.39	.02	.02	.06	.30
Narcissism					.01	.02	.04	.45	.01	.02	.03	.58
Psychopathy					-.01	.02	-.04	.55	-.01	.02	-.02	.71
Sadism					.02	.02	.06	.38	.02	.02	.07	.26
RWA					.02	.01	.17	.006	.02	.01	.16	.007
Suppression									-.01	.01	-.09	.13
R^2			.070				.098				.103	
Adjusted R^2			.058				.074				.077	

* $p < .001$ ** $p = .04$

Vignette 2C – Agreement with the Western Country Keeping Arms’ Deal Contract

Again, models 1 ($F[5, 384] = 7.70, p < .001$) and 2 ($F[5, 379] = 8.32, p < .001$), were significant (see Supp. Table 7.3) while model 3 did not ($F(5, 378) = .34, p = .56$). The explained variance was 15.8% (adjusted R^2). Being younger and higher on RWA were the significant predictors, showing more support for the Western country keeping the arms' deal.

Supplementary Table 7.3

Coefficients for Agreement with Western Country Keeping Arms' Deal Contract

Model	1*				2*				3			
Predictor	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.49	.16	-.15	.002	-.27	.16	-.08	.11	-.24	.17	-.07	.16
Age	-.02	.01	-.13	.01	-.01	.01	-.10	.04	-.01	.01	-.11	.03
Education	.05	.08	.03	.56	.11	.08	.07	.16	.10	.08	.07	.17
Same country	-.08	.16	-.03	.60	.00	.15	.00	.99	.00	.15	.00	.99
Pol. Spectrum	.17	.04	.23	<.001	.04	.04	.05	.35	.04	.04	.05	.35
Mach.					.03	.02	.10	.08	.03	.02	.10	.07
Narcissism					.02	.02	.07	.16	.02	.02	.07	.19
Psychopathy					.01	.02	.02	.81	.01	.02	.02	.75
Sadism					.03	.02	.09	.15	.03	.02	.10	.14
RWA					.03	.01	.26	<.001	.03	.01	.26	<.001
Suppression									.00	.01	-.03	.56
R ²		.091				.181				.181		
Adjusted R ²		.079				.159				.158		

* $p < .001$

Vignette 3B - Agreement with Prosecutor Seizing Volunteers' Boat

In the correlations between the subquestions in Vignette 3, agreeing with the volunteers (in manuscript) and agreeing with the seizure of the volunteers' boat were moderately negatively correlated ($r = -.41, p < .001$). Agreeing with the boat seizure and investigating the volunteers as criminals were also moderately positively correlated ($r = .56, p < .001$). The correlation between agreeing with the volunteers (in manuscript) and investigating them as criminals was also moderately negatively correlated ($r = -.50, p < .001$).

For the regression analysis, the first and second models were significant, $F(5, 384) = 11.78, p < .001$ (model 1); $F(5, 379) = 4.19, p = .001$ (model 2); and $F(1, 378) = 6.60, p = .59$, (model 3; see Supp. Table 7.4). In the final model, 15.5% (adjusted R^2) of the variance was explained with men, higher education, more right-leaning on the political spectrum, and higher Machiavellianism and RWA indicating more support for the volunteers having their boat seized.

Supplementary Table 7.4

Coefficients for Agreement with Prosecutor Seizing Volunteers' Boat

Model	1*				2**				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.83	.26	-.15	.001	-.65	.27	-.12	.02	-.61	.28	-.11	.03
Age	-.02	.01	-.09	.06	-.01	.01	-.07	.14	-.02	.01	-.08	.12
Education	.25	.13	.10	.05	.31	.13	.12	.02	.31	.13	.12	.02
Same country	-.25	.26	-.05	.32	-.19	.25	-.04	.46	-.18	.25	-.04	.47
Pol. Spectrum	.37	.06	.30	<.001	.21	.07	.17	.003	.21	.07	.17	.003
Mach.					.07	.03	.15	.008	.07	.03	.16	.007
Narcissism					-.01	.03	-.01	.80	-.01	.02	-.02	.74
Psychopathy					-.04	.04	-.08	.24	-.04	.04	-.07	.28
Sadism					.04	.03	.07	.23	.04	.03	.08	.21
RWA					.03	.01	.17	.003	.03	.01	.17	.003
Suppression									-.01	.01	-.03	.59
R^2			.133				.178				.179	
Adjusted R^2			.122				.157				.155	

* $p < .001$ ** $p = .001$

Vignette 3C- Agreement with Prosecutor Investigating Volunteers as Criminals

The models with that were significant were model 1, $F(5, 384) = 7.74, p < .001$, and model 2, $F(5, 379) = 2.35, p < .041$ (see Supp. Table 7.5). Model 3 was non-significant, $F(1, 378) = .74, p = .39$. A total of 9.5% (adjusted R^2) of the variance was explained. More right-leaning on the political spectrum and higher on RWA were significant predictors and indicated more support for the volunteers being investigated as criminals.

Supplementary Table 7.5

Coefficients for Agreement with Prosecutor Investigating Volunteers as Criminals

Model	1*				2**				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Predictor												

Gender ID	-.46	.23	-.10	.04	-.27	.24	-.06	.27	-.32	.25	-.07	.20
Age	-.02	.01	-.09	.06	-.01	.01	-.09	.09	-.01	.01	-.07	.18
Education	.15	.11	.07	.18	.21	.11	.09	.07	.21	.11	.10	.06
Same country	-.08	.22	-.02	.72	-.06	.23	-.01	.81	-.06	.23	-.01	.81
Pol. Spectrum	.28	.05	.27	<.001	.19	.06	.18	.003	.19	.06	.18	.003
Mach.					.03	.02	.08	.19	.03	.02	.07	.23
Narcissism					-.02	.02	-.04	.48	-.01	.02	-.03	.55
Psychopathy					-.01	.03	-.02	.71	-.02	.03	-.03	.63
Sadism					.04	.03	.10	.12	.04	.02	.09	.17
RWA					.02	.01	.13	.03	.02	.01	.13	.03
Suppression									.01	.01	.05	.39
R ²		.092				.119				.121		
Adjusted R ²		.080				.096				.095		

* $p < .001$ ** $p = .041$

Vignette 4A – Agreement with Northern European Government’s Program

The agreement between the Northern European government’s program and wanting a similar one implemented in one’s own country (in manuscript) were a near perfect positive correlation ($r = .96, p < .001$). Models 1 ($F[5, 384] = 12.16, p < .001$) and 2 ($F[5, 379] = 7.50, p < .001$) were significant (see Supp. Table 7.6). Model 3 did not $F(5, 378) = 2.45, p = .12$. The total adjusted R² explained variance was 19.7%. The three significant predictors were more right-leaning on the political spectrum, higher psychopathy, and higher RWA, indicating more support for the forced “education” of immigrant babies.

Supplementary Table 7.6

Coefficients for Agreement with Northern European Government’s “Education” Program

Model	1*				2*				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-.68	.17	-.19	.000	-.42	.18	-.12	.02	-.35	.18	-.10	.06
Age	-.01	.01	-.08	.10	-.01	.01	-.06	.25	-.01	.01	-.08	.12
Education	-.08	.09	-.04	.37	.00	.08	.00	.99	-.01	.08	.00	.94
Same country	-.25	.17	-.07	.14	-.18	.17	-.05	.27	-.18	.17	-.05	.27
Pol. Spectrum	.24	.04	.30	.000	.12	.05	.15	.01	.12	.05	.14	.01
Mach.					.01	.02	.05	.39	.02	.02	.06	.30
Narcissism					.01	.02	.04	.40	.01	.02	.03	.53
Psychopathy					.05	.02	.15	.02	.06	.02	.16	.01

Sadism	.00	.02	.00	.99	.01	.02	.02	.81
RWA	.03	.01	.25	.000	.03	.01	.24	.000
Suppression					-.01	.01	-.08	.12
R ²	.137		.214		.219			
Adjusted R ²	.125		.194		.197			

* $p < .001$

Aggregate SSE Analysis

Here we are presenting the information of the aggregate score. We again argue that the aggregate score of SSE, while interesting and worthwhile, reduces the nuances of each type of SSE. Thus, caution should be taken when extrapolating the information from this aggregate analysis.

We included only one of the Danish examples as the correlation was near perfect as mentioned above, as multicollinearity violates regression assumptions and overinflates the explained variance. We chose to include the sub-question of the program of babies being forced to attend assimilation education being implemented in your own country, which was the sub-question that was used in the manuscript. To create the aggregate score, we summed the 9 sub-questions (after reverse coding the support for the volunteers rescuing migrants subquestion). The Cronbach's alpha with the 9 sub-questions was good at $\alpha = .77$. In this analysis, model 1 $F(5, 384) = 24.67, p < .001$, and model 2, $F(5, 379) = 15.80, p < .001$ were significant (see Table 7.7). Model 3, however, was non-significant, $F(1, 378) = 17.4, p = .19$. A total of 35.8% (adjusted R²) of the variance was explained. Being male, younger, more educated, and more right leaning were significant predictors of the aggregate SSE model. For the dispositions, higher Machiavellianism, sadism, and RWA were significant predictors for supporting SSE.

Supplementary Table 7.7

Coefficients for the Aggregate Score of Nine Sub-questions of SSE

Model	1*				2*				3			
	B	SE	beta	sig	B	SE	beta	sig	B	SE	beta	sig
Gender ID	-4.20	.94	-.20	<.001	-	.92	-.11	.02	-	.95	-.09	.04
					2.26				1.96			
Age	-.09	.03	-.12	.01	-.07	.03	-.09	.04	-.08	.03	-.11	.02
Education	.42	.46	.04	.36	.97	.43	.10	.03	.93	.43	.09	.03
Same country	-1.23	.93	-.06	.19	-.73	.86	-.04	.40	-.72	.86	-.04	.40

Pol. Spectrum	2.03	.21	.43	<.001	1.03	.24	.22	<.001	1.03	.24	.22	<.001
Mach.					.26	.09	.15	.004	.27	.09	.16	.002
Narcissism					.03	.09	.02	.71	.02	.09	.01	.84
Psychopathy					.03	.12	.01	.83	.05	.12	.02	.69
Sadism					.28	.11	.14	.01	.30	.11	.15	.007
RWA					.24	.04	.32	<.001	.24	.04	.31	<.001
Suppression									-.05	.04	-.06	.19
R ²		.243				.374				.377		
Adjusted R ²		.233				.357				.358		

* $p < .001$

7.9 Overall Chapter Conclusions

With Study 3, I was able to demonstrate that the dark personalities do support more SSE. In Chapter 9, I discuss how the findings from this study align with the overarching research aim of this thesis. There is very little quantitative research on SSE, and this study has contributed to closing some of that gap. I found evidence that participants higher on some of the dark personality traits (Machiavellianism, psychopathy, and sadism) did engage in more regular suppression use. This had been a theoretical underpinning of the Dark Tetrad where individuals higher on those traits suppress their behavior, which allows them to function better than their clinical counterparts. The results of suppression use provide evidence to that theoretical underpinning. These results may indicate there is a regular state of incongruence, which raises the question if this could in part explicate the dark personality traits being triggered to engage in and support more extremist behavior. Suppression in and of itself was not a significant predictor for support for SSE except in a few sub-questions. This could suggest that suppression use may not be a predictor for a willingness to support extreme *behavior*. However, with the finding Machiavellianism, psychopathy, and sadism engaging in more suppression, could this indicate that suppression use predicts more extreme cognitions (i.e., cognitive rigidity)? This was looked at in Study 4: Would being higher on the dark personalities, along with other traits known to increase or decrease cognitive rigidity, make individuals more susceptible to extreme cognitions?

Chapter 8

8.0 Study 4: Cognitive Rigidity: A Predictive Model of Conspiracy Mentality

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8.1 Abstract

The Internet allows for rapid dissemination of conspiracy theories. Research exploring the association between individual differences and tendency to endorse conspiracy theories (conspiracy mentality [CM]) has reported inconsistent and conflicting results. Developing models to investigate factors that predict CM could promote a more nuanced understanding in the area. Our model was created to investigate dispositional traits (dark personalities) and traits (critical thinking, sense of self, and suppression) that related to cognitive rigidity and CM. In Study 1 ($N = 536$), we conducted an exploratory factor analysis. The measurement structure was confirmed in Study 2 ($N = 713$) before testing our causal model ($N = 1249$) to predict CM. Higher collective narcissism, suppression use, critical thinking (CT; engagement), Right-wing authoritarianism (authority/order), less education, and not living in your birth country were significant predictors, explaining 20% of the variance. The findings relating to CT may suggest that the relationship between CT and susceptibility to CM is complex.

Keywords: Conspiracy theories, Dark Triad, sadism, right-wing authoritarianism, collective narcissism, suppression, critical thinking, structure equation modelling

8.2 Introduction

Conspiracy theories are “**false beliefs** in which the ultimate cause of an event is believed to be due to a plot by multiple actors working together with a clear goal in mind, often unlawfully and in secret” (Swami & Furnham, 2014, p. 220). These false beliefs are resistant to counterfactual information and are not new phenomena. However, they seem to be becoming more mainstream. In four nationally representative samples, 50% of Americans were found to endorse at least one conspiracy theory (Oliver & Wood, 2014). While social media is not responsible for creating conspiracy theories, it now plays an integral role in their dissemination to millions of people and provides a platform for likeminded conspiracy theorists to find each other and confirm their pre-existing conspiratorial beliefs (Rose, 2020). The prevalence of conspiracy theories has led to the creation of dedicated fact-checking websites to counter them (McEvoy, 2020). While it may seem harmless for people to believe in conspiracy theories, some research has found an association between conspiracy theory endorsement and intention to engage in criminal behavior (Jolley et al., 2019). This could in part explain some of the recent antisocial behavior associated with conspiracy theorist groups (e.g., QAnon’s involvement in the January 6 Capitol riots in the US; Herridge et al., 2021), highlighting the importance of this research.

We investigated conspiracy mentality (CM), an overall propensity or susceptibility to accept conspiratorial explanations, (Stojanov & Halberstadt, 2020; Bruder et al., 2013) in our model rather than using a specific set of conspiracy theories, as every conspiracy theory can have unique predictors (Stojanov & Halberstadt, 2020). CM is well-used in the literature as a generic individual difference (Bruder et al., 2013; Swami et al., 2017). By generic, we mean it does not examine any specific conspiracy theory (e.g., the Earth is flat) but instead a more stable individual difference on one’s proclivity to believe in conspiratorial terms regardless of the ideas being proven false, plausible, or not yet known that is not as susceptible to cultural and temporal constraints (Rottweiler & Gill, 2020). CM has been found to be associated with a variety of specific conspiracy theories (Bruder et al., 2013) and violent extremism intentions when other dispositional traits, such as lower morality, were included (Rottweiler & Gill, 2020). This suggests that CM could be a precursor for both conspiracy theory endorsement and engaging in violent behavior that stems from conspiracy theories.

8.2.1 Traits, Dispositional Traits, and Conspiracy Mentality

In the current study, we are postulating cognitive flexibility—having the mental ability or capacity to process new information or adapt to new, unexpected situations (Cañas et al., 2006)—may be a protective factor against CM. Cognitive rigidity, an inability or unwillingness to alter beliefs, attitudes, or behaviors and repeating behavior in mental sets (Greenberg et al., 2012), then is a risk factor for CM. We are investigating cognitive flexibility through higher critical thinking and stronger sense of self while cognitive rigidity is examined through higher scores on suppression use and the so-called dark personalities.

There are three main components of cognitive flexibility: (1) an individual’s awareness that regardless of the situation there are always multiple alternatives; (2) a willingness to adapt to the situation with less dogmatism; and (3) having flexible self-efficacy (stronger sense of self; Martin & Rubin, 1995). These facets allow an individual to feel they can control their responses to the situations they encounter. Those who have higher cognitive flexibility may be able to find different/more “avenues” and ways to process the information more deeply, leading to more openness to new ideas and adjusting their way of thinking after encountering new information. These facets could decrease the propensity of having CM. Conversely, cognitive rigidity—being stuck in repeated patterns of thoughts and behaviors—would increase susceptibility towards CM.

8.2.2 Critical Thinking

Critical thinking (CT) encompasses two main aspects: cognitive skills and dispositions (Quinn et al., 2020). Cognitive skills relate to an individual’s ability to evaluate and analyze evidence and/or identify assumptions to reach a logical conclusion while the disposition-based aspect indicates the willingness of an individual to apply those CT skills (Stupnisky et al., 2018). CT dispositions are related to being open minded and inquisitive while being cautious of making assumptions without weighing the quality and/or source of the evidence (Pithers & Soden, 2000). Ultimately, individuals demonstrate more cognitive flexibility through having higher CT.

8.2.3 Sense of Self

Another aspect to the susceptibility to CM could be the strength of the sense of self. Individuals with a weaker sense of self tend to take more cues from others and have difficulty discerning their own thoughts, feelings, and beliefs (TFBs) with those of others (Flury & Ickes, 2007). Having a weaker sense of self includes (1) a lack of insight into one’s own opinions, (2) inability to maintain an identity separate from others, shift in feelings, values, and preferences,

and (3) a tenuous self-existence. This malleability of one's self-image could lead to more influence from those spreading conspiratorial ideas, as those with a weaker sense of self may be more easily persuaded or adopt ideologies based on the people who are around them (Cuperman et al., 2014).

8.2.4 Suppression

There is no established body of evidence on suppression and CM. Suppression is where an individual attempts to either control or remove TFBs from their minds (Wegner & Zanakos, 1994). People who use suppression may have short-term success in controlling or removing unwanted cognitions, but over time, suppression becomes less effective (Mund & Mitte, 2012). Long-term suppression often results in a rebound effect, where the TFBs actually increase (Wegner et al., 1987). This could indicate that more suppression use leads to increased cognitive rigidity (or less flexibility) by decreasing the capability of processing new information, leading to more CM. In terms of the dark personalities, more suppression use could result in even more rigidity, as those higher on the dark personalities already have more dogmatic patterns of cognition and behavior (Chabrol et al., 2020), and suppression could amplify this.

8.2.5 Dark Tetrad

The D4 is a constellation of dispositional traits—Machiavellianism, narcissism, psychopathy, and sadism—that have been found to be associated with antisocial and dogmatic thoughts and behavior (Buckels et al., 2013; Chabrol et al., 2020) and with higher CM (March & Springer, 2019). Machiavellianism is characterized by manipulative and callous self-promotion, low morality, and a constant cost-benefit analysis on information and situations (McGregor et al., 2015). Machiavellianism has been associated with CM (March & Springer, 2019), motivated by a willingness to deceive. However, according to Kay's (2021) findings, the association between Machiavellianism and CM may be due to a distrust of others. Narcissism's core characteristics revolve around oversensitivity to ego threats (Jones & Neria, 2015). These characteristics have been found to be associated with CM in part as a way for individuals high on narcissism to reinforce a sense of grandiosity and self-importance (e.g., that they are privy to something others are not; Douglas et al., 2017).

Psychopathy's central traits are low anxiety and empathy with high impulsivity (Jones & Paulhus, 2011). Psychopathy contains two main aspects, affect (e.g., callousness) and antisociality. Some research has found that the affect facet of psychopathy was associated with

greater CM but not the antisocial facet when other traits were controlled for, such as odd beliefs (March & Springer, 2019). However, other research found the exact opposite pattern, albeit without the precise same controls (Kay, 2020).

Finally, *schadenfreude*, the enjoyment of other's suffering, is the main trait of sadism (Buckels et al., 2013). There are only two previous studies on sadism and CM. The first study found that those higher on sadism could have more CM, as they distrust others, and this distrust raises suspicion of others conspiring, thus, more CM (Kay, 2020). The second study included sadism and found that along with the distrust odd beliefs and fatalism mediated the relationship between sadism and CM (Kay, 2021). However, research on the D4 and CM have not had consistent findings, and we aim to investigate this more within our model.

8.2.6 Right-wing Authoritarianism (RWA)

After World War II, Adorno et al. (1950) investigated what has since become known as RWA—a dispositional trait that favors right-leaning parties, ethnocentrism, and nationalism (Duckitt, 2010). RWA has some shared characteristics with the D4 (decreased empathy, devalorization) and associations (Tetreault & Sarma, 2021). However, RWA retains unique characteristics. RWA additionally has some characteristic overlap with collective narcissism (CN; Abalakina-Paap et al., 1999; discussed next). Those who are higher on RWA perceive themselves and their ingroup as superior and perceive any dissent from their ingroup as particularly threatening (van Prooijen, 2019). As such, those higher on RWA are more dogmatic in their cognitions and behavioral responses to situations, creating cognitive rigidity.

Like with the D4, the association between RWA, conspiracy theories, and CM have had mixed findings where some studies found associations and others did not. For instance, some have found RWA and conspiracy theories, irrespective of the subject matter, to be associated (Sutton & Douglas, 2014). However, others have found when CM is investigated rather than specific conspiracy theories, the findings with RWA were less consistent (Bilewicz et al., 2015). RWA was found to be associated with more CM when the content of the items revolved around a world view of needing to retain obedience to authority and traditional order (Wood & Gray, 2019). The authors surmised, in those situations, CM could be useful to diminish perceived threats. These mixed findings could indicate that different facets of RWA may be more associated to CM compared to RWA and conspiracy theories and their associations.

8.2.7 Collective Narcissism

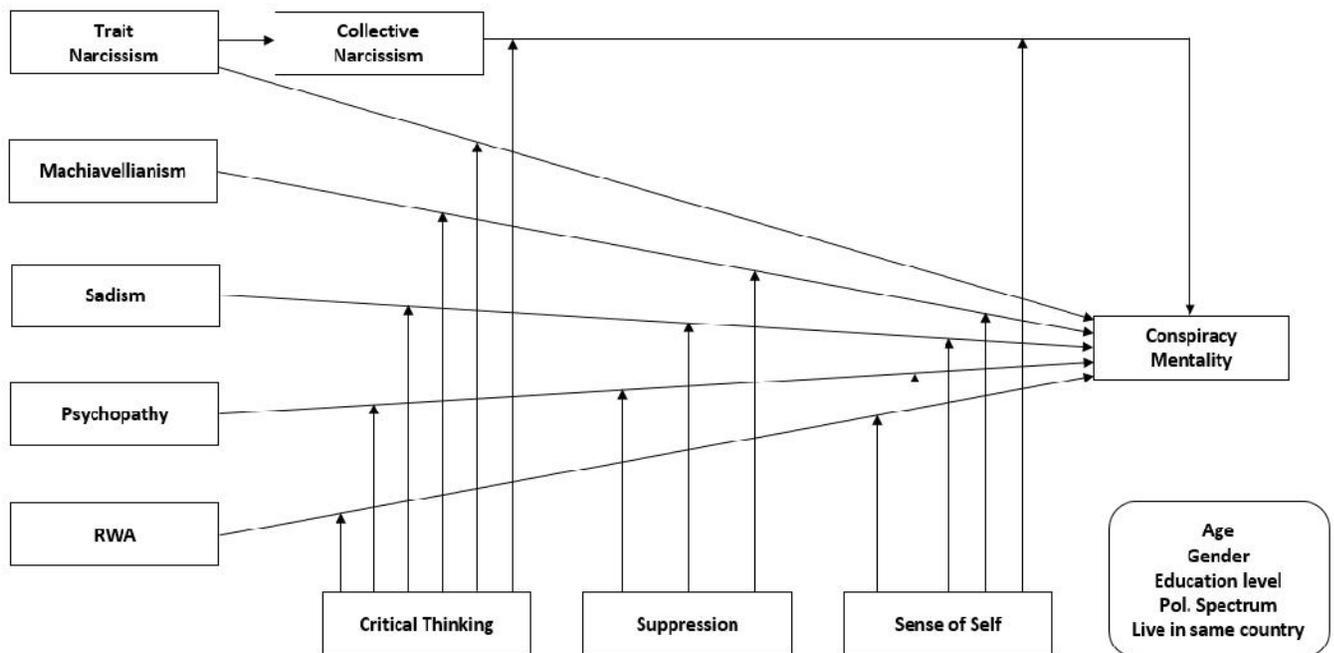
CN is a perceived superiority of an ingroup mostly regarding one's nationalism (Golec de Zavala & Cichocka, 2011). Being higher on CN has been linked to conspiracy theories around events, such as COVID-19 (Hughes & Machan, 2021). Researchers have suggested those higher on CN may endorse conspiracy theories if these theories trigger an ingroup threat, such as perceiving to be more negatively impacted by an event the conspiracy theory is regarding (Bertin & Delouvé, 2021). This may partly be because those higher on CN have a tendency to require external validation, and, thus, are more sensitive to ingroup threats, and this sensitivity can create cognitive rigidity (Golec de Zavala & Federico, 2018). While CN ingroup revolves around nationality (Golec de Zavala & Cichocka, 2011), RWA can view others as outgroups based on a variety of factors, such as political affiliation or lower status (Hartman et al., 2021). CN has also been found to be associated with both political conservatism and authoritarianism, which in turn have been found to correlate with CM (Abalakina-Paap et al., 1999). Hughes and Machon (2021) found that support for conspiracy theories was associated with CN, Machiavellianism, and psychopathy but not individual narcissism. This could be due to the fact that conspiracy theories and CN tend to be on a more macrolevel of society(ies), which may not trigger individual narcissism (microlevel narcissism) in the same way as CN (macrolevel narcissism) might. Based on the association to the other dispositional traits, higher CN may predict more CM.

8.2.8 How the Traits and Dispositional Traits Work in Our Model

Overall, our model investigates if an increase in cognitive rigidity predicts more CM (i.e., cognitive flexibility will predict less CM). To summarize, we argue that CM is a proclivity for conspiratorial thinking, and this proclivity could be a precursor to believing in conspiracy theories. We argue those who are more cognitively rigid in their TFBs and behavior and are more resistant to counterfactual information tend to have more susceptibility to CM. Many of the traits known to increase or decrease cognitive rigidity and dispositional traits in our model have been tested with various conspiracy theories and CM individually and/or with other factors, but they have not been tested as one model. As such, our model is theoretically exploratory to investigate participants' proclivity for CM. See Figure 8.1 for original model.

Figure 8.1

Original Causal Model



We aimed to investigate if and how cognitive rigidity would predict more CM, as we postulated cognitive flexibility to be a protective factor against CM. For our model, we focused on individual differences that could increase or decrease cognitive flexibility. As such, we hypothesize that those who exhibit more cognitive rigidity are more susceptible to having CM.

The three traits known to increase or decrease cognitive rigidity we examine in our model are CT, sense of self, and general suppression use. Higher CT, stronger senses of self, and less suppression use could minimize the risk of having CM. People with higher CT tend to weigh evidence more, and higher CT allows for people to approach different information and situations from several angles (i.e., cognitive flexibility). Those with a stronger sense of self are less likely to be persuaded by others, but those with a weaker sense of self are stuck in patterns where they alter their thoughts based on whom they are with. The last trait in this model is suppression. Regular and consistent suppression use is taxing on individual's cognitive resources. Therefore, people who use less suppression could have more cognitive resources available to handle more information processing, allowing for more flexibility for a variety of situations. We argue that higher CT, stronger senses of self, and less suppression use provide cognitive flexibility, and through that, they could be protective factors against CM.

The dispositional traits in our model are the D4, RWA, and CN. While they have unique characteristics and triggers as well as overlap, they all display patterns of cognitive and behavioral rigidity. We postulate that this rigidity (e.g., dichotomous thinking) could be a risk factor for CM. Individuals higher on the D4 and RWA tend to exhibit more cognitive rigidity and dogmatism. Based on shared attributes, we argue that CN will also exhibit more cognitive rigidity and dogmatic responses when triggered. Ultimately, being higher on the D4, RWA, and CN leads to more rigidity in their TFBs, approaches, and responses to various situations (i.e., decreased cognitive flexibility). Our model could partly help explain some of the inconsistent findings in the literature where the D4 are at times associated with CM, but other times not. For RWA, its relationship to CM may be more context dependent on the type of content used in the CM measure or specific facets of RWA. Those higher on RWA show reactionary patterns of rigidity, but the triggers are more concentrated to specific topics (e.g., traditional lifestyles) compared to the characteristics of the D4 or CN, which are more generalized reactive patterns. Individuals higher on CN are triggered at more of a macro level. As conspiracy theories and CM generally involve multiple actors on a global level, we anticipate that CN, rather than individual narcissism of the D4, may have stronger CM predictive power.

The traits—CT, sense of self, and suppression—we believe will also moderate the relationships between the dispositional traits and CM. The more rigidity, the more CM, meaning if there is rigidity with a dispositional trait plus rigidity with a trait, it will predict even more CM than either alone would. Based on previous research where Machiavellianism, psychopathy, and sadism were significantly associated with suppression use, we anticipate that suppression will only moderate the relationship between those dispositional traits and CM (Tetreault & Sarma, 2021).

There is reason to argue that individual differences on the sense of self will negatively correlate with the dark personalities based on the extant literature (Doerfler et al., 2021) and moderate the relationship between the dispositional traits and CM. As such, we propose also being lower on CT, weaker sense of self, and more suppression use may further increase rigidity, predicting more CM. CT, sense of self, and suppression use will have direct and indirect effects with CM.

8.3 Methods

Since there are known characteristic overlaps on the dispositional traits in our model, we ran an exploratory factor analysis (EFA; Study 1) to do a full measurement model assessment, and Study 2 was to confirm the factor structure with a confirmatory factor analysis (CFA; see Supplementary information for the full EFA and CFA analyses). We then conducted path analysis on our causal model using participants from both studies; thus, we have included participant information from both below.

8.3.1 Participants and Procedures

The current study was online and cross-sectional with eight sections: (1) demographic information; (2) state-sponsored extremism scenarios;⁸ (3) CM; (4) the dark personalities (D4, RWA, CN); (5) CT; (6) suppression use; (7) sense of self; and lastly (8) self-placement on the left-right political spectrum. The questions of each scale were randomized to prevent any order effects. Full ethical approval was granted by NUI Galway Research Ethics Committee prior to data collection. The procedures in Study 2 were identical to Study 1 except participants were recruited through social media and mail outs by departments at tertiary educational institutions in Ireland. Participants could choose to enter a draw for a gift card.

8.3.2 Study 1 Participants

There were a total of 536 participants (384 female, 143 male, 7 non-binary, and 2 other) in our final analyzed sample after 27 participants were removed.⁹ The participants' age ranged from 18–73 years ($M = 27.57$, $SD = 11.24$). The majority identified as being White (87.5%); other, including mixed race (6.5%); Asian (4.1%); Black (1.7%); or White Irish Traveler (.2%). The highest level of completed education was: 3.7% having completed a PhD; 19.6% a Master's degree; 27.2% an undergraduate degree; 48.5% high school; and 0.9% some high school. Participants grew up in 46 different countries, with Ireland (61.4%), Canada (10.1%), and United States (6.8%) representing the top three.¹⁰ The top three of the 18 countries where participants were currently living were Ireland (82.1%), Sweden (5.4%), and United States (4.1%). 73.5% of participants were currently living in the same country as the one they grew up in. The average on

⁸ State-sponsored extremism vignettes were analyzed separately.

⁹ Twenty-seven participants were removed: 9 from the pilot, 8 for going too quickly, 1 for nonsensical answers, 8 for being multivariate outliers, and 1 under the age of legal consent.

¹⁰ The first listed country was used.

the political spectrum was 3.99 ($SD = 2.01$, range 1–11), indicating our sample, as expected, was left leaning. Data collection ran May 10-29, 2021.

8.3.3 Study 2 Participants

A total of 713 participants' (466 female, 217 male, 19 non-binary, 7 other, and 4 preferred not to say) data were retained for analysis after 10 were removed.¹¹ The average age was 28.44 years ($SD = 11.08$, range 18-72). The majority identified as White (88.4%), other, including mixed background (5%), Asian (4.3%), and Black (2.2%). The highest level of completed education was: 3.5% having completed a PhD; 23.8% a Master's degree; 34.8% an undergraduate degree; 36.9% high school; and 1% some high school. Participants grew up in 56 different countries with Ireland (59.6%), Northern Ireland (10.3%), and United States (6.7%) representing the top three. The top two of the 31 countries where participants were currently living were Ireland (71.2%) and Northern Ireland (12.8%). A total of 73.8% were currently living in the same country they grew up in. The mean on the 11-point political spectrum was 3.93 ($SD = 2.14$). Data collection ran June 11-August 11, 2021.

8.3.4 Measures

The supplementary information contains all the items for each scale and subscale.

8.3.4.1 Conspiracy Mentality. We used the 5-item Conspiracy Mentality Questionnaire (CMQ; Bruder et al., 2013) that investigates participants' generic conspiracy mentality across cultures. Participants were asked to indicate to what extent they agreed with each item on an 11-point Likert scale ranging from 0 (*not at all*) to 10 (*completely*) with 5 being *neutral*. The original Likert labels were a mix of certainty and likelihood with percentages. In the pilot, participants mentioned the Likert labels were confusing; thus, we simplified the labelling to the above.

8.3.4.2 Dark Tetrad, Right-Wing Authoritarianism, Collective Narcissism. We used the Short Dark Triad (SD3; Jones & Paulhus, 2013) to measure Machiavellianism, narcissism, and psychopathy. The SD3 consists of three subscales with nine items each (27 items in total). Participants rated their level of agreement to each statement on a 5-point Likert scale, ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). To measure sadism, we used the Short Sadistic

¹¹ Eight were removed for being multivariate outliers, 1 for going too quickly, and 1 for having no variation in responses.

Impulse Scale (SSIS; O'Meara et al., 2011), which consists of 10 items scored from 1 (*strongly disagree*) to 5 (*strongly agree*).

The Short-version Right-wing Authoritarianism scale (SRWA; Rattazzi et al. 2007) is a 14-item scale, which asks participants to indicate their level of agreement on a 7-point Likert scale from -3 (*totally disagree*) to +3 (*totally agree*). We used the collective narcissism scale (CNS; Golec de Zavala et al., 2009) to measure CN. The CNS is a 9-item scale where participants rate the extent to which they agree or disagree on a 7-point Likert scale with 1 being *strongly disagree* and 7 being *strongly agree*.

8.3.4.3 Critical Thinking. We used two scales to assess participants' CT dispositions: the Motivated Strategies for Learning Questionnaire Critical Thinking Subscale (MSLQ-CT; Pintrich et al., 1993) and Student-Educator Negotiated Critical Thinking Dispositions Scale (SENCTDS; Quinn et al., 2020). The MSLQ-CT scale has five items on a 7-point Likert scale (1-*not at all true of me* to 7-*very true of me*), measuring participants' tendency to use CT by measuring how participants problem solve and make decisions. We adapted the wording to remove references to specific university classes for generalizability. We used 15 items from four of the six subscales (attentiveness, open-mindedness, perseverance, and intrinsic goal motivation) from the SENCTDS, which asks participants to indicate their level of agreement on each item on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

8.3.4.4 Suppression, Sense of Self, and Political Spectrum. For suppression tendency, we used the White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994). The WBSI is a 15-item 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). To measure the strength of one's sense of self, the Sense of Self Scale (SOSS; Flury & Ickes, 2007) was used. The SOSS is a 14-item scale that asks participants to indicate the degree to which they agree on a 4-point Likert scale, from 1 (*very uncharacteristic of me*) to 4 (*very characteristic of me*). An 11-point left-right political spectrum scale was used with 1 being *completely liberal*, 6 being *neither left nor right*, and 11 being *completely conservative* based on Vegetti and Širini 's (2019) recommendations.

8.4 Aims and Hypotheses

The overarching aim of the study was to investigate to what extent cognitive rigidity predicted CM. We explored cognitive rigidity in terms of individual differences on traits and dogmatism of the dark personalities (D4, RWA, and CN) to predict more support for CM. The

traits known to increase or decrease cognitive rigidity we included in our model were CT, sense of self, and suppression use. We examined the traits for both their direct predictive power to CM and moderating effects between the dark personalities and CM.

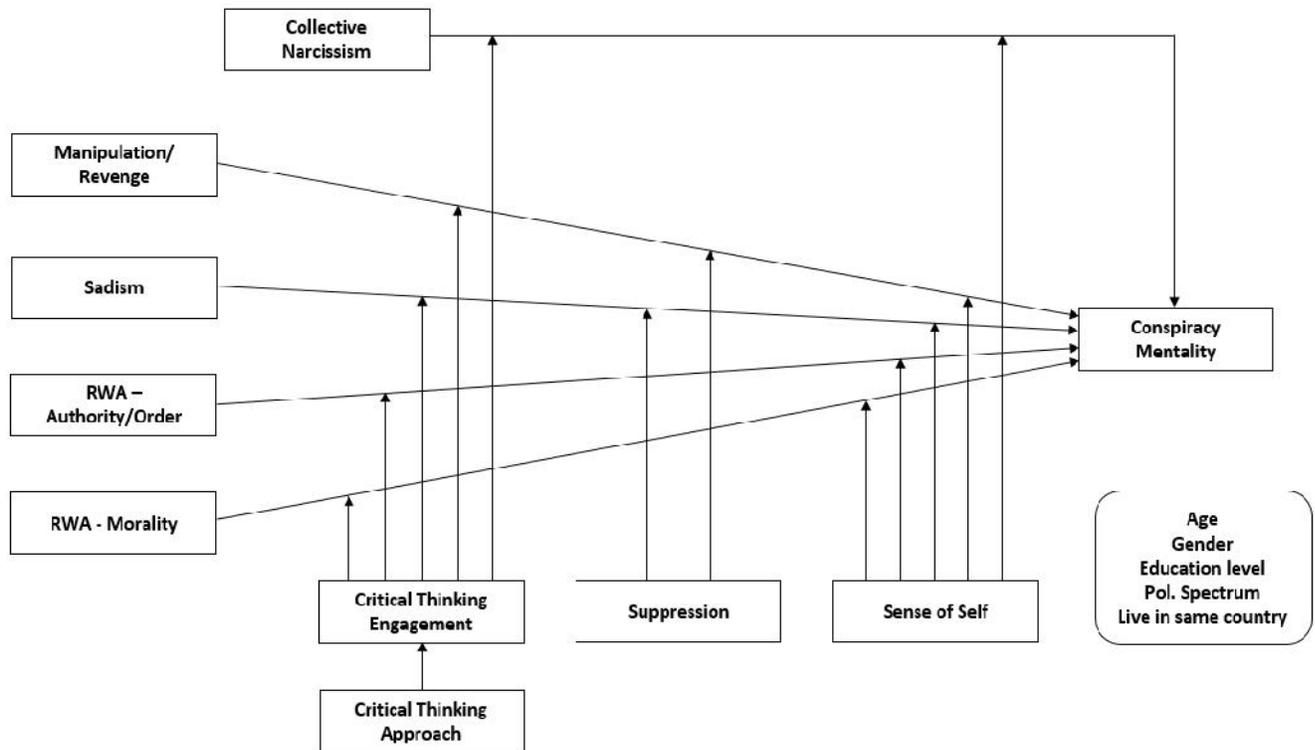
8.4.1 Modified Hypotheses

Based on the EFA/CFA results, we modified some of the model and hypotheses (Figure 8.2). When conducting full measurement analytics on a model, it is statistically required to modify the model based on the EFA and CFA results, as are required (Kline, 2015). The findings from the EFA/CFA that affected the path analysis hypotheses were: (1) CT had two factors rather than one (CT-approach: how participants perceived their CT to be; and CT-engagement: how participants indicated they engaged with material); (2) RWA had two factors instead of one (RWA-authority/order: obedience to authorities or wanting traditional order; and RWA-morality: traditional, conservative values); (3) Manipulation/Revenge became a combined factor of some Machiavellianism and psychopathy items; and (4) Trait narcissism and Dangerous lifestyle (a factor with some psychopathy items) were removed for unacceptable factor loadings. The full EFA/CFA results are in the supplementary material.

We had five hypotheses for our causal model: *(H1)* Less CT-engagement, more Suppression, and a weaker Sense of self would predict more CM. *(H2)* Higher RWA-authority/order, RWA-morality, Manipulation/Revenge, Sadism, and CN would predict more CM. *(H3)* Suppression would moderate the relationship between Manipulation/Revenge and Sadism and CM. *(H4)* Sense of self and CT-engagement would moderate the relationship between the dispositional traits and CM. *(H5)* CT-approach would be completely mediated by CT-engagement in the relationship with CM.

Figure 8.2

Modified Model after EFA



8.5 Results

8.5.1 Correlational Analysis

The correlational analysis was conducted on the summed factors after the CFA findings on both Study 1 and 2 participants ($N = 1,249$; Table 8.1). There were significant bivariate correlations with Sense of self that were not investigated specifically in the causal model, for instance, Sense of self and CT-engagement ($r = .38, p < .001$). The other correlation was the significant negative moderate association between Sense of self and Suppression ($r = -.51, p < .001$), which indicates that those who have a weaker sense of self tend to engage in more cognitive suppressive techniques.

Table 8.1

Zero-order Correlation Matrix of Revised Structural Model Factors ($N = 1,249$)

Factor	1	2	3	4	5	6	7	8	9	10
1 Suppression	1									
2 Sadism	.18**	1								
3 Sense of Self	-.51**	-.15**	1							
4 Collective Narcissism	.17**	.08**	-.14**	1						

5 RWA-authority	.05	.07*	-.06*	.45**	1					
6 Critical Thinking-approach	-.02	-.03	.19**	-.07**	-.20**	1				
7 Manipulation-Revenge	.20**	.46**	-.16**	.32**	.29**	-.02	1			
8 Critical Thinking-engagement	-.24**	-.11**	.38**	-.07*	-.03	.43**	-.09**	1		
9 RWA-morality	-.11**	.02	.05	.21**	.47**	-.19**	.09**	-.04	1	
10 Conspiracy Mentality	.21**	.07*	-.12**	.22**	.17**	.03	.13**	.00	.08**	1

**Significant at .01 (2-tailed) *Significant at .05 (2-tailed)

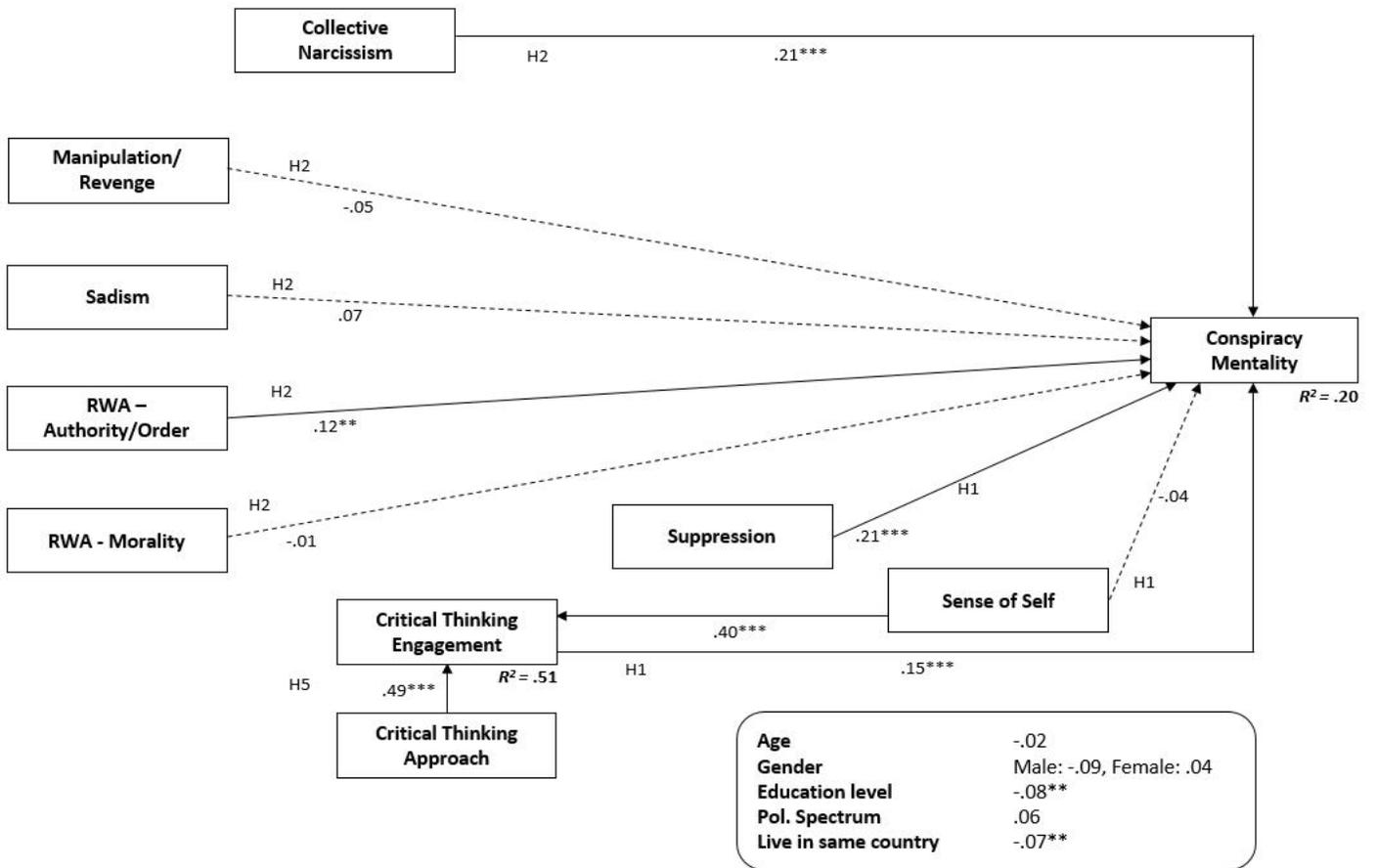
8.5.2 Revised Structural Model Analysis

The path analysis was conducted in AMOS(27) with maximum likelihood estimation. The path analysis was conducted with both Study 1 and 2 participants. The initial model fit indices indicated an unacceptable model fit, $\chi^2(26) = 466.81, p < .001, CFI = .975, TLI = .638, SRMR = .031, RMSEA = .117$. Based on the largest modification index, a regression path was drawn from Sense of self to CT-engagement. After adding the regression path, model fit became acceptable, $\chi^2(25) = 138.84, p < .001, CFI = .994, TLI = .903, SRMR = .011, RMSEA = .060$.¹² We analyzed the direct, indirect, and total effects with bootstrapping with 5,000 resamples at 95% confidence. Standard regression weights for the paths and squared multiple correlations for the endogenous variables (CM and CT-Engagement) can be found in Figure 8.3.

Figure 8.3

Final Modified Parsimonious Causal Model with Standardized Beta Weights

¹² Once model fit becomes acceptable, no more regression paths should be drawn to avoid overfitting the model; otherwise, there could be an artificial increase in the beta weights and explained variance or Type I errors (Kline, 2015).



* $p < .05$, ** $p < .01$, *** $p < .001$

There were six significant direct effects in our model to CM: CN ($\beta = .21, p < .001$), Suppression ($\beta = .21, p < .001$), CT-engagement ($\beta = .15, p < .001$), RWA-authority/order ($\beta = .12, p < .01$), education ($\beta = -.08, p < .01$), and not living in the same country as one grew up ($\beta = -.07, p < .01$). We had two significant indirect effects: CT-approach to CT-engagement to CM ($\beta = .07, p < .001$) and Sense of self to CT-engagement to CM ($\beta = .06, p < .001$). None of our hypothesized moderations were significant, which led to the modified parsimonious model in Figure 8.3. Our model explained 20% of the variance in CM. Direct, indirect, and total effects can be found in Table 8.1.

Table 8.1

Direct Effects of Modified Causal Model

	Pathway			P-value	
	<u>With Moderator</u>				
Male	→	Conspiracy Mentality	-.09	.19	
Female	→	Conspiracy Mentality	.04	.62	
Living in Same Country	→	Conspiracy Mentality	-.07	.01	
Political Spectrum	→	Conspiracy Mentality	.06	.09	
Age	→	Conspiracy Mentality	-.02	.60	
Highest Education	→	Conspiracy Mentality	-.08	.01	
Collective Narcissism	→	Conspiracy Mentality	.21	< .001	
	<i>CT-Engagement</i>	→	Conspiracy Mentality	-.03	.48
	<i>Sense of Self</i>	→	Conspiracy Mentality	.05	.27
Manipulation/Revenge	→	Conspiracy Mentality	-.05	.24	
	<i>CT-Engagement</i>	→	Conspiracy Mentality	.04	.38
	<i>Suppression</i>	→	Conspiracy Mentality	.03	.56
	<i>Sense of Self</i>	→	Conspiracy Mentality	-.05	.30
Sadism	→	Conspiracy Mentality	.07	.08	
	<i>CT-Engagement</i>	→	Conspiracy Mentality	-.07	.06
	<i>Suppression</i>	→	Conspiracy Mentality	-.01	.90
	<i>Sense of Self</i>	→	Conspiracy Mentality	.03	.47
RWA-Authority/Order	→	Conspiracy Mentality	.12	.006	
	<i>CT-Engagement</i>	→	Conspiracy Mentality	.09	.09
	<i>Sense of Self</i>	→	Conspiracy Mentality	.02	.70
RWA-Morality	→	Conspiracy Mentality	-.01	.85	
	<i>CT-Engagement</i>	→	Conspiracy Mentality	-.07	.08
	<i>Sense of Self</i>	→	Conspiracy Mentality	.03	.51
CT-Engagement	→	Conspiracy Mentality	.15	< .001	
Sense of Self	→	Conspiracy Mentality	-.04	.28	
Suppression	→	Conspiracy Mentality	.21	< .001	
CT-Approach	→	CT-Engagement	.49	< .001	
Sense of Self	→	CT-Engagement	.40	< .001	

CT = Critical Thinking

Indirect Effects of Modified Causal Model

	Pathway			P-value		
CT-Approach	→	CT-Engagement	→	Conspiracy Mentality	.07	.001
Sense of Self	→	CT-Engagement	→	Conspiracy Mentality	.06	.001

CT = Critical Thinking

8.6 Discussion

In the current study, we investigated if less cognitive flexibility could predict more CM. While we did not hypothesize background factors (age, education) being significant, we found that less education and not living in the same country as one grew up were significant predictors.

One finding that was in line with previous research was less education predicting CM (van Prooijen, 2019). However, it was the second weakest standardized beta coefficient, highlighting other facets were stronger in predicating CM. Overall, there is partial support that cognitive rigidity (or decreased cognitive flexibility) does predict more CM directly and indirectly. Below, we discuss the nuances of our findings where rigidity was and was not a risk factor for CM.

8.6.1 The CMQ and CM rather than Specific Conspiracy Theories

The CMQ has been criticized by some researchers. Two aspects were the content and internal validity. The content of the CMQ has been questioned with three of the items not necessarily requiring underlying conspiracist beliefs on which to indicate high agreement (Swami et al., 2017). However, the dimensionality of the CMQ held in the EFA, CFA, SEM, and the Cronbach's alpha with the other two items, indicating that they were measuring the same construct. We argue the CMQ in our samples does tap into an overall CM. The internal validity issue was only on a translated scale (Swami et al., 2017) while we used the English version of the scale. Additionally, using CM instead of specific conspiracy theories avoids content-specific idiosyncratic predictors that cannot be extrapolated or generalized to other conspiracy theories (Stojanov & Halberstadt, 2020; Imhoff, 2015). Thus, investigating a generic propensity to think in conspiratorial terms is a more stable trait.

8.6.2 Cognitive Rigidity and Conspiracy Mentality: Causal Model

In our causal model, to improve model fit, we drew a regression path from Sense of self to CT-engagement (Kline, 2015). While we had not hypothesized this covariance, there are some overlapping characteristics in terms of cognitive processing that could explain why this covariance was necessary. Cognitive rigidity in some dispositional traits did predict CM. We hypothesized if there were a perceived violation of a core trait, a participant was especially sensitive to based on dispositional characteristics, there would be less cognitive flexibility and more CM (i.e., a cognitive heuristic).

8.6.3 Critical Thinking

We had hypothesized that less CT-engagement would predict more CM (*H1*). Counterintuitively, we found that higher CT-engagement predicted more CM. Our results are not in line with previous research, which found that higher CT, measured by an argumentation task, led to less endorsement of conspiracy theories (Lantian et al., 2021). Lantian et al. investigated two aspects of CT (open-ended argumentative CT ability, and self-report CT skills) and their

association with CM. They found that the objective task was negatively associated with CM (the mini-meta-analysis on their Study 1 and 2), but they found their three-item CT subjective measure to be nonsignificant and nonlinear. A potential explanation could be related to their three-item measure of subjective CT, which was a more direct self-evaluation of CT (“I have good critical thinking ability”) than the more in-depth scales we used. Our subjective scales asked about specific self-report behavior and a general approach to the way participants think they would engage with material critically (“When a theory, interpretation, or conclusion is presented, I try to decide if there is good supporting evidence”). This may explain our different findings to assess subjective assessment of CT. As Lantian and colleagues themselves highlighted, their null result “does not prevent a more subtle or complex relationship that would require a much larger sample size” (p. 680).

CT, as it relates to CM, is more complex than it would seem in self-report measures, partly because those who endorse conspiracy theories perceive themselves to be good critical “freethinkers” (Lantian et al., 2021). For instance, individuals who endorse conspiracy theories often cite anecdotal evidence from hidden/obscure sources that support their claims but contradict peer-reviewed research (Plotkin et al., 2009), and as such, feel they have strong CT skills.

There could be another unmeasured factor, such as emotional reactivity, that may mediate the relationship between CT-engagement and CM. There is a myriad research that demonstrates individuals do not always think critically and make decisions based on pure logic, especially under potentially emotive contexts (Kahneman & Frederick, 2005). This could suggest that CT skills in one area do not necessarily equate to high CT in other areas. Previous research has found that individuals utilize CT more when new information they come across contradicts or refutes, rather than supports, previously held beliefs (Johnson, 2018). This may indicate that CT alone is not a protective factor against CM, but there is interplay between CM and pre-existing beliefs. Thus, people with more CM could still also have higher CT, and it would depend if the person chose to utilize their CT. This needs further examination.

8.6.4 Suppression

Suppression, as hypothesized, was a significant predictor of CM (*HI*) and was the strongest predictor along with CN. A tendency to suppress is an effective strategy to inhibit unwanted cognitions in the short term. However, its effectiveness not only diminishes over time

but also leads to an increased likelihood of those thoughts (Wegner & Zanakos, 1994). Gold and Wegner (1995) surmised that emotional reactions to the thoughts people are trying to suppress become enhanced over time, leading to more intense emotions. Suppression use has not been studied in the extant literature with CM. We suggest that the longer individuals engage in suppression, the more cognitive rigidity that could develop, and this rigidity could predict more CM. As this was the first study to investigate this, further research is required to explicate the results fully.

8.6.5 Weaker Sense of Self

We had anticipated that a weaker sense of self (*H1*) would predict more CM. However, it was non-significant. We did find an indirect effect of sense of self to CM through CT-engagement, indicating that a stronger sense of self could predict higher CT-engagement. A characteristic of having a weaker sense of self is being more susceptible to the opinions of others (Flury & Ickes, 2007; Cuperman et al., 2014), an aspect that was not included in our study. Thus, an individual with a weaker sense of self in isolation may not be susceptible to have more CM, but it would be interesting to investigate if peer influence from those who believe in conspiracy theories or who have higher CM could impact those with a weaker sense of self. Future research could examine how peer influence and the strength of one's sense of self could lead to more CM.

8.6.6 Dark Traits and Conspiracy Mentality

We had partial support for our hypotheses (*H2*) on the dispositional traits with RWA-authority/order and CN being significant predictors of more CM; whereas RWA-morality, Manipulation/Revenge, and Sadism were nonsignificant. Thus, we had partial support of cognitive rigidity from the dispositional traits and its ability to predict CM.

8.6.6.1 Right-wing Authoritarianism. Two main facets of RWA are the want for order and strong authority and adherence to traditional values. It is important to note that while the CMQ is a generic assessment of CM, the items could still have contextual interpretations that could trigger those higher on some dispositional traits more than others. The CMQ content focused on politics and governments but did not include pro- or anti-establishment (Wood & Gray, 2019) nor morality (prejudice against an outgroup perceived as lower status; Hartman et al., 2021). As such, it could explain why RWA-authority/order, which comprises more characteristics that could be influenced by political aspects, was a significant predictor for CM while RWA-morality, which focuses on traditional values, was not. Individuals higher on RWA-

authority/order may have had more cognitive rigidity in their cognitions once triggered, creating a dogmatic response and predicting more CM. Wood and Gray (2019) surmised that those higher on RWA were more likely to predict CM based on the type of conspiracy theory (though their results were inconclusive to this). We argue predicting CM depends on the RWA factor *and* the type of content being investigated. Thus, if CM content about Judaism had been used, as Bilewicz and Sedek (2015) found, the RWA-morality factor could be a significant predictor, as that characteristic could be more triggered. Given the RWA two-factor loadings from our EFA/CFA, researchers should be cautious how RWA is analyzed. Our results could help explain the inconsistent findings with RWA and CM in the extant literature where CM has had mixed findings (Grzesiak-Feldman, 2015) because most previous research did not assess RWA's dimensionality.

8.6.6.2 Collective Narcissism. CN, as hypothesized, was one of the strongest significant predictors in our model. Like RWA-authority/order, those higher on CN are more sensitive to ingroup threats (Van Prooijen, 2019), increasing the likelihood of a cognitively rigid response (Chabrol et al., 2020; Morgades-Bamba, et al., 2020). The content of CMQ has been shown in previous research to trigger an ingroup threat (Golec de Zavala & Federico, 2018) and in turn more CM by those higher on CN (Hughes & Machon, 2021). One possibility is that those higher on CN felt their nationalistic superiority threatened by the items in the CMQ, and being triggered produced a more cognitively rigid response, predicting CM. Future research should consider that CN rather than trait narcissism may explain more of the variance in CM, as both CN and CM tend to focus on macrolevel aspects.

8.6.6.3 Manipulation/Revenge and Sadism. Manipulation/Revenge was a factor that included both Machiavellianistic and psychopathic traits, and it is surprising that it was not a significant predictor of CM, similarly with sadism. One explanation for this could be that CM is a cognitive framework; whereas manipulation, revenge, and sadism lead to more rigid behavioral patterns (Buckels et al., 2013). This could partly explain why these factors were not significant in our model. Our findings do not support previous research that found Machiavellianism, psychopathy, and sadism predicted more radicalized cognitions (Chabrol et al., 2020; Morgades-Bamba et al., 2020). However, the previous research based radicalized cognitions on approval of several religious radicalized behaviors (e.g., "What do you think about damaging the belongings of people of another religion than yours?"). These studies could also support that those who are

higher on Machiavellianistic, psychopathic, and sadistic traits demonstrate more behavioral rigidity than the cognitive rigidity that the CMQ measures. While we did not find gender differences in predicting CM, it is important to note that both Chabrol and colleagues' (2020) and Margades-Bamba and colleagues' (2020) studies both exclusively investigated radicalized cognitions on women. Therefore, their results may not be able to be extrapolated to samples with males.

8.6.6.4 Overall D4 Findings. Our results could indicate that more CM does not necessarily equate to radicalized cognitions and could provide more support that the dark personality link to conspiracy theories is through a shared trait among the D4 as Kay suggested (2021). However, in that study, he investigated the D4 by their distinctive traits and their prediction of CM. Kay mediated the relationship of each facet of the D4 individually with other traits (odd beliefs, fatalism, and distrust of others) to CM, surmising that it was these shared traits amongst the D4 that predicted CM rather than the D4's individual differences. This highlights a new aspect that could help explicate the mixed findings in the extant literature. Unfortunately, Kay ran separate causal models, raising the question if the D4 traits had been included in one model, controlling for each other, would the same results have been found? Other researchers have also found that the D3 do not always retain the three factors (Siddiqi et al., 2020), highlighting the necessity to assess the D4 as a construct rather than individually as Kay had done. For the current study's findings, we suggest that some attributes of the D4 may lead to more behavioral, rather than cognitive rigidity, and it would only be the cognitive rigidity that is associated with CM. This needs more investigation with studies that conduct path analysis with the dark personalities in one causal model.

8.6.7 Moderation Effects

While we had hypothesized suppression (*H3*), sense of self (*H4*), and CT-engagement (*H4*) would additionally moderate the relationships between differing dispositional traits and CM, there were no significant moderation effects. Had we run separate moderation models as Kay (2021) did with the D4 and conspiracy theories, we may have found moderating effects. However, one of the core advantages of using SEM is its ability to hypothesis test on complex models, allowing for the observed variables being factored in simultaneously, providing the model's compatibility with the data in its entirety, not its parts (Werner & Schermelleh-Engel, 2009). Thus, running numerous models to test moderating effects individually counteracts the

purpose of SEM, and additionally increases the likelihood of getting both Type I and II errors (Weston & Gore, 2006).

Even though the bivariate correlations showed a significant positive relationship between the dispositional traits and suppression use, and a weaker sense of self (except RWA-morality), and a few with CT-engagement, they did not moderate the relationship with CM. In previous research, suppression use and Machiavellianistic, psychopathic, and sadistic traits were shown to be positively correlated (Tetreault & Sarma, 2021). Thus, we had anticipated participants who were higher on the one of those dark personalities and suppression would have an amplified of cognitive rigidity, predicting more CM (*H3, H4*). However, our results did not support these hypotheses.

Sense of self was an indirect predictor. This may be due to a person with a lower sense of self being influenced more by situational contexts, as we discussed above, where those who have a weaker sense of self take on characteristics of those around them and have more situationally based personalities (Briere & Runtz, 2002). This could mean that their lack of self-efficacy is a unique type of dogmatism, where they are flexible in the sense they adapt to the situation and people around them but lack a cognitive flexibility to resist that. Conversely, this could explain why a stronger sense of self predicted higher CT-engagement. If one is adapting constantly to those around them (i.e., weaker sense of self), it would be more challenging to engage in other cognitively demanding tasks, such as CT, because that requires stronger self-efficacy (Yüksel & Alci, 2012). However, CT-approach was completely mediated by CT-engagement with CM in support of our hypothesis, indicating those who had higher CT-approach reported themselves as engaging in higher CT with the material (*H5*).

8.6.8 Unexpected Findings: A Way to Improve Critical Thinking Readiness?

There is an underlying supposition that CT is a skill that everyone can learn, and it will minimize conspiratorial theory endorsement (White, 2021). However, in our model, we found a stronger sense of self predicted higher CT-engagement. In the causal model, CT-approach ($\beta = .49, p < .001$) and Sense of self ($\beta = .40, p < .001$) explained 51% of the variance of CT-engagement. A stronger sense of self was not hypothesized to predict higher CT-engagement. This then raises the question of whether having a weaker sense of self could inhibit the individual's ability either to learn or utilize CT skills. If so, could strengthening someone's sense of self improve their receptivity to learn CT? Self-efficacy and self-esteem have been found to be

associated with increased CT, and sense of self is also associated with those attributes (Yüksel & Alci, 2012). However, they are not equivalent, and sense of self may further strengthen an individual's CT ability.

8.6.9 Bivariate Correlations

All bivariate correlations can be found in Table 2. One association outside of our predicted model that could warrant further examination was the Sense of self and Suppression ($r = -.51, p < .001$), indicating that someone with a weaker sense of self tends to engage in more suppressive techniques. One possible explanation for this could be the malleability of those with a weaker sense of self where they adopt characteristics of those who have a stronger sense of self (Cuperman et al., 2014). This could indicate that they are engaging in regular suppression of their true selves in favor of others' characteristics, which could have other clinical implications that are outside of the scope of this current paper.

8.6.10 Implications

From a theoretical perspective, our results suggest the Dark Triad may not be a triad but a dyad, and thus, EFAs at a minimum should be done in future work in this area. Based on our findings, a weaker sense of self could impede one's ability to learn CT. Therefore, interventions that are attempting to improve CT may benefit from strengthening the sense of self for longer term benefits. Lastly, while interventions to decrease CM may focus on CT development, it could be erroneous to teach only CT, as other authors have pointed out that CT interventions have not yet been shown to be evidence based (Lantian et al., 2021). Our results indicate higher CT skills alone may be insufficient to protect against developing CM.

8.6.11 Limitations

The data for the current study were collected during the COVID-19 pandemic, and the CM items were regarding politicians and governments. The timing and content of the CM measure could have impacted participants' responses. However, the CMQ measured the proclivity for conspiratorial thinking not specific conspiracy theories around governments and COVID-19. Despite recruiting widely and having more diversity in ethnicity and age than most samples, our sample was still predominantly Western, educated, industrialized, rich, and democratic (WEIRD). Thus, generalization from our results needs to be drawn with caution. As with all correlational studies, causation cannot be drawn, and experimental investigation into our model should be conducted in future research.

8.7 Conclusion

We investigated how individual traits known to increase or decrease cognitive rigidity and dispositional traits that demonstrate cognitive rigidity could predict CM. We found cognitive rigidity in terms of CN, RWA-authority/order, and suppression use predicted more CM. However, dogmatic responses regarding more CM still may depend on individualistic triggers. Counterintuitively, we found having higher CT-engagement predicted more CM. This suggests that there could be a disconnect between CT and CM, and that higher CT in and of itself is not a protective factor. For instance, people may not choose to think critically based on pre-existing beliefs. Future research should examine how emotional responses could trigger support for various types of conspiracy theories to improve interventions or counter narratives. Our model does in part support that some cognitive rigidity is a risk factor for CM.

8.8 Supplementary Materials

Supplementary Table 8.1

Factor Loadings EFA

Factor Labels and Individual Items	Factors											
	1	2	3	4	5	6	7	8	9	10	11	12
Factor 1: Suppression												
WBSI 1 – Things prefer not to think about	.69	.04	-.25	-.02	-.01	-.05	.08	-.29	-.18	.14	-.08	-.12
WBSI 2 – Wonder why I have thoughts I do	.72	.11	-.44	.08	.09	.04	.19	-.21	-.17	.22	-.03	.20
WBSI 3 – Thoughts I cannot stop	.79	.12	-.39	.01	.06	.02	.15	-.29	-.13	.23	-.06	.26
WBSI 4 – Images that I cannot erase	.64	.17	-.31	.09	.13	.11	.30	-.18	-.10	.21	.03	.34
WBSI 5 – Thoughts frequently return to one idea	.61	.15	-.41	.08	.13	.00	.09	-.27	-.05	.23	.05	.27
WBSI 6 – Wish could stop thinking about certain things	.79	.05	-.36	.09	.09	-.07	.06	-.34	-.12	.20	.01	.07
WBSI 7 – Mind races so fast wish I could stop it	.71	.10	-.35	.01	.09	.05	-.01	-.22	-.17	.16	.07	.29
WBSI 9 – Thoughts keep jumping into my head	.76	.13	-.37	.10	.06	.07	.12	-.27	-.11	.17	.02	.18
WBSI 10 – Stay busy to keep thoughts from intruding	.75	.09	-.45	.05	.13	-.05	.02	-.35	-.16	.20	.07	.26
WBSI 11 – Things try not to think about	.76	.09	-.23	.03	-.05	-.02	.10	-.32	-.19	.14	-.06	.00

WBSI 12 – Really wish I could stop thinking	.71	.12	-.40	.06	.09	-.02	-.01	-.33	-.06	.16	.07	.19
WBSI 13 – Do things to distract myself from thoughts	.77	.12	-.39	.06	.10	-.02	.04	-.35	-.13	.16	.06	.19
WBSI 14 – Have thoughts try to avoid	.78	.14	-.32	.05	.06	-.02	.15	-.31	-.12	.15	.01	.04
WBSI 15 – Have thoughts don't tell anyone	.65	.13	-.25	.11	.12	.02	.32	-.32	-.11	.21	-.20	.14
Factor 2: Sadism												
SSIS 1 – Hurting people would be exciting	.07	.69	-.07	.09	.17	.02	.24	-.05	.07	.09	.06	.26
SSIS 2 – Have hurt others because could	.15	.63	-.12	.10	-.01	-.10	.42	-.05	.01	.14	.05	.21
SSIS 3 – Wouldn't intentionally hurt others (R)	.06	.53	-.11	.01	.00	-.03	.36	-.11	.08	.02	-.13	.27
SSIS 4 – Hurt people for enjoyment	.15	.71	-.22	.09	.06	-.01	.33	-.09	.09	.13	.06	.28
SSIS 5 – Humiliated others to keep them in line	.16	.59	-.12	.14	.13	-.05	.46	-.01	.00	.18	.05	.35
SSIS 6 – Enjoy hurting someone physically, sexually, emotionally	.07	.72	-.08	.09	-.01	-.08	.33	-.08	.11	.05	.10	.10
SSIS 7 – Enjoy seeing people hurt	.05	.77	-.04	.07	.08	-.04	.31	-.08	.07	.10	.15	.20
SSIS 8 – Fantasies involve hurting people	.12	.70	-.10	.02	.01	.03	.27	-.09	.00	.11	.05	.25
SSIS 9 – Get so angry want to hurt people	.20	.62	-.19	.05	.01	.01	.44	-.01	-.04	.12	-.07	.24
Factor 3: Sense of Self												
SOSS 1 – Wish more consistent with feelings (R)	-.50	-.17	.74	-.09	-.15	.07	-.10	.42	.07	-.19	-.10	-.19
SOSS 2 – Hard to figure out personality, interests, opinions (R)	-.34	-.07	.76	-.09	-.18	.12	-.09	.37	.06	-.19	-.03	-.25
SOSS 5 – Wonder if people can see me (R)	-.39	-.10	.57	-.15	-.07	.07	-.16	.28	.05	-.14	.05	-.13
SOSS 6 – Other's thoughts and feelings carry greater weight (R)	-.31	.00	.59	.00	-.09	.14	.00	.23	.01	-.06	.03	.04
SOSS 7 – Clear and definite sense of who am	-.31	-.15	.69	-.06	-.03	.15	-.04	.37	.07	-.06	.14	-.12
SOSS 8 – Bothers me my personality doesn't seem well-defined (R)	-.31	-.05	.78	-.08	-.10	.10	-.10	.38	.05	-.20	.01	-.07
SOSS 9 – Not sure can understand or trust my thoughts and feelings (R)	-.41	-.17	.74	-.08	-.16	.21	-.11	.45	.01	-.17	-.03	-.20
SOSS 10 – Who am I is a question I ask a lot (R)	-.37	-.10	.62	-.07	-.04	-.13	-.13	.24	.14	-.19	.12	-.23

SOSS 11 – Need others to help me understand what I think or feel (R)	-.31	-.07	.68	-.13	-.10	.17	-.14	.35	.02	-.08	-.19	-.09
Factor 4: Collective Narcissism												
CN 1 – Wish other groups would quickly recognize authority of my group	.03	.11	-.13	.76	.43	-.09	.24	-.03	.19	.11	.32	.11
CN 2 – My group deserves special treatment	.04	.13	-.13	.68	.40	-.12	.23	-.10	.21	.15	.33	.18
CN 3 – Never satisfied until my group gets what deserves	.10	.04	-.13	.74	.26	.05	.26	-.05	.00	.21	.19	.18
CN 4 – Insist on my group getting respect	.09	.03	-.14	.71	.35	-.05	.21	-.08	.09	.21	.25	.13
CN 5 – Angry when others criticize my group	.14	.02	-.10	.71	.36	-.13	.01	-.09	.15	.12	.25	.05
CN 6 – If my group had major say, world would be better place	-.09	.03	-.02	.60	.28	.06	.01	.01	.08	-.02	.35	-.01
CN 8 – Not many understand importance of my group	.11	.09	-.14	.80	.28	.00	.20	-.06	.09	.18	.18	.14
CN 9 – True worth of my group misunderstood	.13	.09	-.12	.74	.21	-.05	.20	-.14	.05	.14	.07	.04
Factor 5: RWA-Authority/Order												
SRWA 1 – Need a leader who will do what has to be done to destroy radical new ways and sinfulness	.01	.09	-.13	.33	.71	-.11	.11	-.10	.34	.23	.21	.22
SRWA 2 – Criticize government and religion create useless doubts	.02	.00	-.14	.26	.65	-.19	.02	-.08	.31	.03	.26	.08
SRWA 3 – Eliminate troublemakers and get us back to our true path	.06	.13	-.13	.37	.70	-.15	.21	-.07	.18	.16	.22	.19
SRWA 4 – Instead of more “civil rights” need a good stiff dose of law and order	.02	.08	-.07	.31	.73	-.10	.14	-.01	.27	.13	.08	.13
SRWA 5 – Obedience and respect for authority most important values	-.02	-.04	-.05	.28	.71	-.05	.07	.02	.22	.05	.25	-.03
SRWA 6 – Crack down harder on deviant groups and troublemakers	.07	.05	-.08	.32	.71	-.15	.06	-.03	.27	.16	.26	.01
SRWA 7 – Need disciplined citizens following national leaders	.03	.03	-.08	.28	.68	-.07	.13	-.08	.26	.02	.18	.04
Factor 6: Critical Thinking-Approach												

MSLQ 1 – Question things hear or read to decide if convincing	.06	-.04	.09	-.07	-.08	.78	.03	.16	-.18	.16	-.15	.09
MSLQ 2 – Try to decide if good supporting evidence	-.09	-.08	.25	-.04	-.19	.78	.00	.38	-.19	-.09	-.16	-.02
MSLQ 3 – Treat material as a starting point	-.04	-.04	.23	-.03	-.09	.77	.06	.26	-.18	-.02	-.06	.04
MSLQ 4 – Try to play around with ideas of my own related to what I am learning	-.05	-.03	.12	-.03	-.09	.78	.05	.26	-.16	.02	-.01	.15
MSLQ 5 – Think about possible alternatives	.01	-.01	.06	-.05	-.09	.78	.05	.24	-.17	.02	-.10	.11
Factor 7: Manipulation/Revenge												
Mach 2 – Use clever manipulation to get my way	.18	.38	-.22	.11	.05	.04	.60	-.11	.00	.14	.24	.26
Mach 3 – Whatever it takes, get important people on your side	.08	.20	-.17	.25	.27	-.04	.51	-.10	.05	.11	.45	.19
Mach 5 – Wise to keep track of information to use against people later	.04	.34	-.16	.16	.16	.02	.70	-.05	.09	.13	.08	.25
Mach 6 – Wait for right time to get back at people	.16	.26	-.10	.23	.13	.08	.71	-.08	-.09	.08	.03	.20
Mach 7 – Hide things to preserve reputation	.20	.28	-.05	.12	.14	-.02	.57	-.06	.05	.09	.09	.04
Psych 1 – Get revenge on authorities*	.11	.45	-.18	.18	-.05	.11	.56	-.13	-.07	.22	-.01	.42
Psych 3 – Payback needs to be quick and nasty	.02	.37	-.05	.20	.10	-.03	.61	-.04	.09	.08	.07	.18
Psych 6 – People who mess with me regret it	.05	.29	-.04	.31	.29	.08	.50	.04	.01	.18	.24	.33
Psych 9 – Say anything to get what want	.15	.31	-.23	.21	.16	-.02	.51	-.10	.01	.05	.29	.31
Factor 8: Critical Thinking-Engagement												
SENCTDS 1 – Easily distracted when thinking about a task (R)	-.46	-.07	.39	.02	-.18	.02	.01	.73	.22	-.26	-.05	-.31
SENCTDS 2 – Hard to concentrate when thinking about problems (R)	-.43	.01	.28	-.03	-.24	.07	.13	.59	.18	-.31	-.08	-.33
SENCTDS 3 – Miss important information because I'm thinking of other things (R)	-.39	-.06	.39	-.10	-.24	.00	-.14	.61	.13	-.34	.02	-.34
SENCTDS 4 – Daydream when learning a new topic (R)	-.36	-.04	.30	-.04	-.24	-.06	.03	.57	.19	-.36	.05	-.40
SENCTDS 9 – Persevere even when it is very difficult	-.18	-.13	.32	-.13	.07	.29	-.20	.70	-.13	-.01	-.01	.04
SENCTDS 10 – Frustration does not stop me from	-.21	-.13	.38	-.12	-.04	.22	-.15	.68	.02	-.01	.06	-.03

finishing what needs to be done												
SENCTDS 11 – Keep going even if it is hard	-.18	-.10	.30	-.08	.05	.39	-.17	.59	-.13	.00	-.10	.13
SENCTDS 13 – Look forward to learning challenging things	-.17	-.12	.32	.01	-.01	.49	-.03	.63	-.13	-.04	-.04	.15
SENCTDS 14 – Completing difficult tasks is fun	-.18	-.03	.22	.05	.04	.39	.08	.63	-.08	-.02	-.08	.15
Factor 9: RWA-Morality												
SRWA 8 – Atheists and others who have rebelled against established religions are as good and virtuous as those who attend church (R)	-.04	.15	.01	.08	.28	-.16	-.04	-.04	.70	.07	.13	.11
SRWA 9 – Rules regarding sexual behavior are just customs which are not necessarily any better (R)	-.07	-.09	-.05	.15	.16	-.21	-.05	.04	.58	.09	.16	-.16
SRWA 10 – Nothing wrong with nudist camps (R)	.08	.00	-.13	.16	.24	-.19	-.03	-.19	.54	.22	.12	-.17
SRWA 11 – Homosexuals and feminists should be praised for defying “traditional family values” (R)	-.08	.11	.06	.08	.19	-.03	.11	.06	.60	.03	-.12	.15
SRWA 12 – Everyone should have their own lifestyle, religious beliefs, and sexual preferences (R)	-.09	.14	.07	.10	.15	-.02	.14	.00	.63	.03	-.04	-.01
SRWA 13 – People should pay less attention to the Church and the Pope, and develop own personal standards of what is moral and immoral (R)	-.16	-.01	.08	.09	.31	-.24	-.08	.06	.63	.02	.20	.05
SRWA 14 – Good young people have greater freedom “to make their own rules” and to protest against things they don’t like (R)	-.14	.08	.02	.09	.32	-.15	.05	.08	.70	.02	-.02	.02
Factor 10: Conspiracy Mentality												
CMQ 1 – Many important things happen, which the public is never informed about	.15	.11	-.07	.10	.08	.09	.10	-.05	-.04	.72	.02	.08
CMQ 2 – Politicians do not tell true motives	.14	.12	-.12	.11	.01	.05	.12	-.12	.00	.71	-.06	.10
CMQ 3 – Government agencies closely monitor all citizens	.17	.07	-.16	.09	.09	.05	.15	-.14	.09	.67	.06	.17
CMQ 4 – Events which superficially lack a connection often result of secret activities	.12	.08	-.10	.14	.26	-.03	-.03	-.15	.08	.75	.19	.14

CMQ 5 – Secret organizations greatly influence political decisions	.10	.04	-.09	.17	.20	-.03	.04	-.11	.10	.76	.13	.09
Factor 11: Grandiosity												
Narc 3 – Group activities dull without me	.08	.14	-.02	.25	.25	-.01	.18	-.09	-.01	.19	.62	.15
Narc 4 – Know special because everyone keeps telling me	-.03	.13	.10	.24	.14	-.09	.09	.09	-.01	.06	.66	.17
Narc 5 – Get acquainted with important people	.03	.05	-.05	.19	.11	.05	.25	.01	.04	.03	.58	-.04
Factor 12: Dangerous Lifestyle												
Psych 2 – Avoid danger (R)	-.01	.19	-.01	.10	.02	.10	.21	.03	.03	-.01	.05	.56
Psych 4 – People say I'm out of control	.28	.42	-.30	.05	.17	-.10	.32	-.12	.01	.21	.12	.54
Psych 7 – No trouble with the law (R)	.09	.27	-.06	.00	-.02	.01	.20	-.03	-.01	.04	.00	.54

Supplementary Table 8.2

Items Eliminated from EFA

Scale	Item Deleted	Reason
WBSI	8 – Try to put problems out of mind	< .50 loading
SSIS	10 – People would enjoy hurting others if they gave it a go	< .50 loading
SOSS	3 – Think how fragile my existence is (R)	< .50 loading
	4 – Good sense of long term goals	< .50 loading
	12 – Tend to be sure of myself and stick to own preferences even when group expresses different preferences	< .50 loading
CN	7 – Do not get upset when people do not notice achievements of my group	< .50 loading
SD3 - Machiavellianism	1 – Not wise to tell secrets	< .50 loading
	4 – Avoid direct conflict because they may be useful in future	< .50 loading
	8 – Plans benefit self, not others	< .50 loading
	9 – People can be manipulated	< .50 loading
SD3 - Narcissism	1 – Natural leader	< .50 loading
	2 – Hate center of attention (R)	< .50 loading
	6 – Embarrassed by compliments (R)	< .50 loading
	7 – Been compared to famous people	< .50 loading
	8 – Average person (R)	< .50 loading
	9 – Insist on getting respect deserve	< .50 loading
SD3 - Psychopathy	5 – Can be mean to others	Cross loadings on three factors
	8 – Enjoy having sex with people hardly know	< .50 loading
SENCTDS	5 – Thinking is not about 'being flexible', it's about 'being right' (R)	< .50 loading

6 – Being open-minded about different worldviews is less important than people think (R)	< .50 loading
7 – To solve complex problems, it's better to give up fast, if you cannot reach a solution so as to not waste time (R)	< .50 loading
8 – Know what I think and believe so it's not important to dwell on it any further (R)	< .50 loading
12 – Enjoy information that challenges me to think	Cross loadings on two factors
15 – Enjoy dealing with information that arouses my curiosity	Cross loadings on two factors

Supplementary Table 8.3

Items Deleted with the CFA

Item Deleted	Reason
Factor 2: Sadism	
SSIS 3 – Wouldn't intentionally hurt others (R)	Loading < .50
SSIS 5 – Humiliated others to keep them in line	Loading < .50
SSIS 9 – Get so angry want to hurt people	Loading < .50
Factor 7: Manipulation/ Revenge	
Mach 7 – Hide things to preserve reputation	Loading < .50
Psych 1 – Get revenge on authorities	Loading < .50
Factor 8: Critical Thinking Engagement	
SENCTDS 1 – Easily distracted when thinking about a task (R)	Loading < .50
SENCTDS 2 – Hard to concentrate when thinking about problems (R)	Loading < .50
SENCTDS 3 – Miss important information because I'm thinking of other things (R)	Loading < .50
SENCTDS 4 – Daydream when learning a new topic (R)	Loading < .50
Factor 11: Grandiosity	
Narc 3 – Group activities dull without me	Factor AVE < .5 and CR < .70
Narc 4 – Know special because everyone keeps telling me	Factor AVE < .5 and CR < .70
Narc 5 – Get acquainted with important people	Factor AVE < .5 and CR < .70
Factor 12: Dangerous Lifestyle	
Psych 2 – Avoid danger (R)	Factor AVE < .5 and CR < .70
Psych 4 – People say I'm out of control	Factor AVE < .5 and CR < .70
Psych 7 – No trouble with the law (R)	Factor AVE < .5 and CR < .70

Supplementary Table 8.4

Final CFA Factor Item Loadings

Factors and Items	Loading
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Manipulation/Revenge	
Machiavellianism 2	.62
Machiavellianism 3	.52
Machiavellianism 5	.73
Machiavellianism 6	.64
Psychopathy 3	.59
Psychopathy 6	.59
Psychopathy 9	.55
Sadism	
SSIS 1	.59
SSIS 2	.59
SSIS 4	.64
SSIS 6	.73
SSIS 7	.52
SSIS 8	.62
RWA Morality	
SRWA 8	.53
SRWA 9	.53
SRWA 10	.59
SRWA 11	.56
SRWA 12	.53
SRWA 13	.58
SRWA 14	.59
RWA Want for Order-Authority	
SRWA 1	.71
SRWA 2	.56
SRWA 3	.69
SRWA 4	.78
SRWA 5	.64
SRWA 6	.74
SRWA 7	.67
Collective Narcissism	
CN 1	.74
CN 2	.56
CN 3	.72
CN 4	.73
CN 5	.63
CN 6	.51
CN 8	.66
CN 9	.62
Suppression	
WBSI 1	.61
WBSI 2	.62
WBSI 3	.75
WBSI 4	.61
WBSI 5	.53
WBSI 6	.81
WBSI 7	.66
WBSI 9	.71
WBSI 10	.64
WBSI 11	.69

WBSI 12	.64
WBSI 13	.65
WBSI 14	.76
WBSI 15	.52
Sense of Self	
SOSS 1	.68
SOSS 2	.73
SOSS 5	.53
SOSS 6	.52
SOSS 7	.70
SOSS 8	.77
SOSS 9	.73
SOSS 10	.57
SOSS 11	.56
Critical Thinking-Approach	
MSLQ 1	.71
MSLQ 2	.66
MSLQ 3	.73
MSLQ 4	.77
MSLQ 5	.71
Critical Thinking-Engagement	
SENCTDS 9	.71
SENCTDS 10	.62
SENCTDS 11	.72
SENCTDS 13	.62
SENCTDS 14	.58
Conspiracist Ideation	
CMQ 1	.59
CMQ 2	.54
CMQ 3	.53
CMQ 4	.75
CMQ 5	.79

Supplementary Table 8.5

Cronbach's Alpha, Composite Reliability, AVE, and the Fornell-Larcker Test of All CFA Factors

	CR	AVE	1	2	3	4	5	6	7	8	9	10
1 Manipulation-Revenge	.79	.80	.37	.61								
2 Sadism	.78	.78	.38	.59	.61							
3 RWA-Morality	.76	.76	.31	.16	.02	.56						
4 RWA-Authority/Order	.86	.86	.47	.37	.11	.65	.69					
5 Collective Narcissism	.86	.85	.42	.40	.08	.27	.53	.65				
6 Suppression	.92	.92	.44	.26	.21	-.13	.05	.26	.66			
7 Sense of Self	.86	.87	.42	-.19	-.18	.09	-.02	-.16	-.51	.65		

8 Critical Thinking Approach	.85	.84	.51	-.07	-.05	-.21	-.25	-.11	-.03	.24	.72		
9 Critical Thinking-Engagement	.79	.79	.42	-.14	-.14	-.02	-.01	-.08	-.26	.43	.50	.65	
10 Conspiracist Ideation	.78	.78	.42	.13	.02	.06	.26	.32	.26	-.11	.03	.06	.65

CR (Composite Reliability), AVE (Average Variance Extracted). All values below and to the left of the bolded values (excluding , CR, and AVE) need to be lower than the bolded value itself for discriminant validity to be demonstrated.

Supplementary Table 8.6

HTMT

	1	2	3	4	5	6	7	8	9	10
1. Manipulation-Revenge										
2 Sadism	.58									
3 RWA-Morality	.16	.01								
4 RWA-Authority/Order	.39	.10	.64							
5 Collective Narcissism	.40	.08	.27	.52						
6 Suppression	.25	.21	.14	.05	.25					
7 Sense of Self	.19	.19	.09	.02	.16	.54				
8 Critical Thinking-Approach	.09	.05	.21	.26	.09	.02	.23			
9 Critical Thinking-Engagement	.13	.13	.04	.03	.08	.26	.43	.51		
10 Conspiracist Ideation	.14	.04	.03	.22	.28	.28	.12	.07	.06	

8.9 Overall Chapter Conclusions

The causal model for Study 4 was a theoretically exploratory model where I investigated traits known to increase or decrease cognitive rigidity and dispositional traits that increased or decreased cognitive rigidity and their relationship to conspiracy mentality. Some of the traits and dispositional traits that were included in the model had been examined previously but not together in one model. As such, a full measurement model analysis with an EFA and CFA prior to running the causal model in SEM was conducted. I found that some traits known to increase or decrease cognitive rigidity and dispositional traits that created cognitive rigidity (suppression use along with CN, RWA-authority/order) did predict more proclivity for conspiracy mentality or more extreme cognitions. Counterintuitively, CT-engagement also predicted more conspiracy mentality. Suppression use was one of the strongest predictors in the model, indicating that cognitive suppression, as was measured, may be able to predict more extreme cognitive patterns but not behavior. This could explain why suppression was not a significant predictor for sympathy towards SSE as was found in Study 3. However, this may suggest that suppression use increases the susceptibility towards having conspiracy mentality. I argue it is through the rigidity in part that predicts the cognitions that have the proclivity to be more extreme. More extreme cognitions may be a precursor for extremist behavior. In Chapter 9, I will discuss in greater detail how the four studies and their findings together show support in part for the theoretical model that was discussed in Chapter 2. Potential future research that can be conducted to examine other aspects of our theoretical model will also be discussed.

Chapter 9

9.0 Discussion

9.1 Chapter Overview

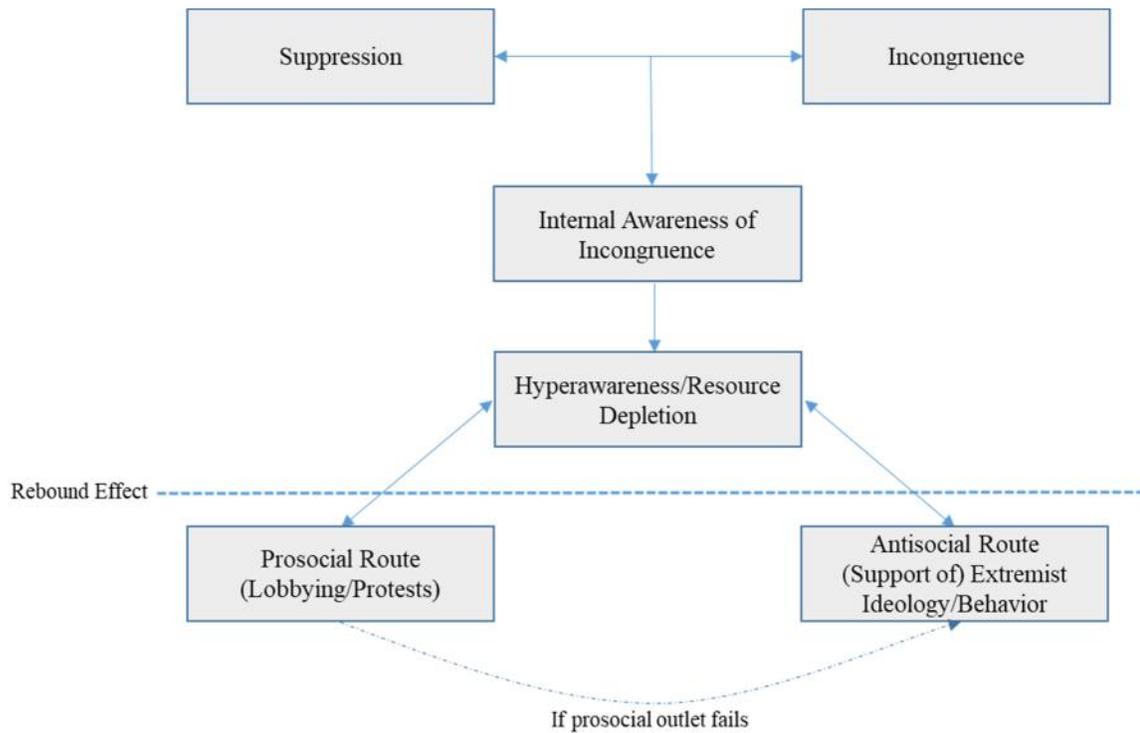
The primary aim of this PhD was to investigate suppression and (in)congruence as processes that may be relevant to (bystander support for) violent and non-violent extremism. I developed a model that expands upon existing psychological theories, mainly ironic theory (Wegner, 1994), limited resource model (Baumeister et al., 1998), and incongruence theory (Grawe, 2004). My model, furthermore, incorporates other theories in extremism research, such as general strain theory (collective strains or stressors are experienced; Agnew, 2010) and coercive radicalization (indoctrination learned through assimilation through controlled behavioral regimens; Beevor, 2017). My model was designed to explain how a bidirectional relationship between suppression and incongruence (suppression could lead to incongruence and incongruence could lead to suppression) could lead to more extremism. The crux of the model was (1) suppression leads to a feeling of incongruence/a feeling of incongruence leads to suppression, (2) there is an internal awareness of the incongruence, which (3) leads to a hyperawareness/ego depletion, resulting in (4) a rebound effect that could lead individuals on a prosocial or antisocial route. In terms of this thesis and the application to extremism, the rebound effect was theorized to lead to either more (support of) extremist ideology or behavior (see Figure 9.1 below and in the Preface and Chapter 2). While the model presents both a prosocial and antisocial route to rectify or alleviate incongruence and rebound effects, I focused primarily on the antisocial route in all studies while Study 2 also contained an expression condition that could equate theoretically to a prosocial outlet as it allowed for “releasing” of one’s emotions over “bottling” them up. The three forms of extremism I examined were: eco-hacktivism (Studies 1 and 2), state-sponsored extremism (SSE; Study 3), and cognitions (i.e., proclivity to think in conspiratorial terms; Study 4).

This final chapter will present a summary of the findings from each study and evaluate the contributions of each study to improve the understanding of various forms of extremism and the suppression-incongruence model of extremism. As I have detailed discussions within each of the empirical studies, Chapters 5 – 8, this discussion chapter is focusing on contributions of the model and overall findings. I will highlight the implications of this research, followed by a

discussion of the limitations of each study, including the impact of COVID-19 public health guidelines and restrictions on this thesis. With the implications of this research in mind, I will discuss potential future research directions to build on the findings. Lastly, this chapter will present concluding remarks.

Figure 9.1

Suppression-Incongruence Model of Extremism



9.2 Overview of Findings from Study 1

In Study 1, the form of extremism I explored was eco-hacktivism. Hacktivism is becoming an increasingly popular form of prosocial unethical behavior with a staggering annual global cost to governments, businesses, and individuals (Morgan, 2022). I examined different facets of morality and how these facets could allow bystanders to connect morally to three actors in the hacktivism vignette (the hacktivists, their spokesperson, and a supportive social media commentator). I focused on bystander (micro level) support with attitudes and moral connectedness towards three actors involved in the hacking or the dissemination of the

information about the hacking. Most previous research has focused either on the hacktivists and why they hack (Chng et al., 2022) or attitudes towards the hackers (Heering et al., 2020; PytlikZillig et al., 2015). I additionally focused on non-state non-violent eco-hacktivism, an area of hacktivism that has received very little attention compared to other forms of eco-extremism (Pickard, 2020). This unique aspect of my study expands the evidence base for this form of extremism.

The differing moral connectedness to the actors created the conditions for participants to potentially be suppressing their moral compass and statistically predicted participants' willingness to contribute to a crowdfunding campaign in support of the hacktivists. Crowdfunding is a bottom-up initiative wherein a large number of people each donate a small amount of money to support a cause. I examined if this online mode of fundraising could be a tool to garner support from bystanders for objectively amoral behavior. The results suggest that suppressing morality to justify contributing to crowdfunding becomes necessary to keep congruence between one's TFBs and a willingness to donate to support an extremist cause, and varying morality facets that allowed a connection to the actors would facilitate this process.

I found that different facets of moral connectedness to the hacktivists (Moral altruism), their spokesperson (Moral social connectivity), and a supportive social media commentator (Moral behavioral intentions) predicted more willingness to donate to a crowdfunding campaign. In terms of pre-existing beliefs, and its relationship to the willingness to donate to support the hacktivists, I found indirect effects only, meaning the pre-existing beliefs predicted Moral altruism and Moral social connectivity, which then predicted a willingness to donate. These findings suggest that subjective morality is multifaceted, and how it predicts a willingness for extremist behavior varies between actors. Thus, these facets and relationships are more nuanced than originally hypothesized.

9.2.1 Contributions to Research

The findings from Study 1 expanded the existing literature on hacktivism by investigating different actors, different moralities, and moral connectedness to those actors, which, to the best of my knowledge, has not been conducted in the literature previously. Very few studies have looked at bystanders' opinions on hacktivism, and when they do, it is direct perceptions of the hackers or their hacking (Heering et al., 2020; PytlikZillig et al., 2015). This means there is no extant literature to compare the results directly.

As mentioned in Chapter 5, hacktivism, as a form of extremism which encompasses prosocial unethical behavior, is often conducted to expose or otherwise bring attention to a cause (Caldwell, 2015). For hacktivists to be effective in their mission, they must attract public buy-in. At a micro level, individuals need to support the hacking, as without this support, hacktivism cannot achieve the change it set out to do. Yet, no previous study has investigated the diverse aspects that are required for public buy-in, such as the spokesperson or social media users, who were included in the current study.

The influence of social media over hacktivism should be a key consideration for research in this area, as hacktivism is communicated and gains traction nearly exclusively through messages on social media (George & Leidner, 2019). Thus, my study provides a more ecologically valid investigation of how hacktivism works and is effective in the real world by including the spokesperson (i.e., someone who communicates hacking efforts on the hacktivists social media platforms) and the people who engage with those posts. Previous research found that the perceived benevolence of the hackers predicted the most bystander support for the hackers (PytlikZillig et al., 2015). However, I found that the spokesperson, as the *de facto* “public face” of the hacktivist efforts, and the participants’ moral social connectivity to these efforts, was the strongest predictor of not just bystander support for the hackers but also the willingness to donate to their cause. The number of people who engage with information on social media influences the extent to which the messages are spread and garner support. Without this engagement, the hacktivists’ message would not be as effectively circulated. I found that the connectedness through moral behavior intentions of the social media commentator predicted the willingness to financially support the hacktivists’ cause. These suggest that participants may have been suppressing their objective morality based on their pre-existing beliefs and moral connectedness to the actors in the vignette. While my findings support moral disengagement about hacking may have occurred (Bandura et al., 1996), it was also the morality facets that connected the participants to the hackers and spokesperson that then predicted donations. This raises the question of how morality and suppression of morality intertwine in support of extremism. Previous research conducted by Yam (2018) found the opposite where participants asked to suppress ethics-related thoughts subsequently showed less antisocial behavior (cyberbullying, cheating, and dishonesty). These participants were, however, instructed to

suppress, not something that they had done naturally, and this may in part explain some of the differences between the findings.

Without including a spokesperson for the hacktivism (to deliver the message) or social media commentators (to amplify and spread the message) in studies, they lack two major elements of how hacktivism works in the real world. These are novel aspects of my study that both add to the understanding of a bottom-up support for hacktivism and increase the ecological validity of my study that should be considered in future research. Based on the findings, the moral connectivity of the public face of the hacktivism predicted the most bottom-up financial support for this form of extremism. The current study has demonstrated that it is not only the perceived good intentions of the hackers that predicts support, but also the moral connectedness of the spokesperson and behavioral intentions of peer-like influences on social media.

9.2.2 How the Findings Relate to the Suppression-Incongruence Model

Overall, the conditions were met that allowed participants to morally disengage according to social cognitive theory (Bandura, 1991; Bandura et al., 1996) or, in terms of my model, suppress their morality willingly to donate to the hacktivists' cause. I surmise it is one's pre-existing beliefs on the topic (clean water, in this case) that facilitated this moral suppression, which indirectly predicted a willingness to support extreme behavior. By measuring participants' pre-existing beliefs on the importance of clean water, I directly examined how those pre-existing beliefs influenced and predicted both moral connectivity to the three actors and a willingness to donate to the hacktivists' cause. I found that the pre-existing beliefs predicted two of the moral facets that were significant in my model (hacktivists Moral altruism and spokesperson Moral social connectivity). This suggests that participants indicated moral connectedness to the actors to be congruent with their TFBs.

These findings support the suppression-incongruence model, where individuals who feel stronger about clean water were more likely to have stronger moral connectedness to those directly involved in the extremist behavior (i.e., hacktivists and their spokesperson) and were more likely to donate. Therefore, these participants stayed congruent throughout (TFBs about the clean water and being more willing to support those who achieved cleaning the water regardless of the means). I suggest that these participants suppressed their objective moral compass in order to retain congruency. The findings from this study indicated that one can also suppress TFBs (morality) to stay congruent, and by suppressing to stay congruent, the suppression still predicted

more willingness to support extremist behavior. This provides support for my model and suggests that participants may have experienced rebound effects for wanted thoughts, not for unwanted or intrusive thoughts as found in Robertson and colleagues (2012), Wegner (1994), and Baumeister (1998). This is unique to this study compared to the other studies in this thesis, which looked at suppression as creating an incongruence/incongruence creating suppression, not suppression to retain congruence. No other studies have investigated this to compare my results to, and it would be interesting to investigate the long-term health effects of suppressing to stay congruent may have on people, as researchers have found that suppression longitudinally predicts worse health outcomes (Chapman et al., 2013).

9.3 Overview of Findings from Study 2

In Study 2, participants were randomly assigned to a suppression, expression, or control condition. I investigated if the number of intrusive thoughts and affect changes would be impacted when participants were asked to suppress their TFBs about eco-hackivism (using the same hackivism vignette from Study 1). Being asked to suppress was theorized to create an incongruent state with participants, which should follow my model and lead to a rebound effect. Participants in the expression condition were given the opportunity to release (i.e., express) their TFBs about the hackivism article. This should have created a more congruent state that would not only not create a rebound effect but would theoretically produce the opposite effect (a decrease in intrusive thoughts and negative affect, and an increase in positive affect; i.e., interaction effect) compared to the suppression or control conditions.

9.3.1 Contributions to Research

Considering the need to adhere to public health measures, I adapted Study 2 to be conducted online. To the best of my knowledge, it was one of the first studies to be conducted on suppression online with random assignment to conditions. As such, lessons were learned, and these were discussed at length in Chapter 6. These lessons could guide future research in the area and contribute to the methodology of online research in this area. Another novel aspect of this study was the expression condition to examine whether writing about one's TFBs after reading the hackivism article would alleviate any residual negative emotions about the article.

While the manipulation was not successful, the results do raise the question if expressing emotions can also cause increases in negative affect or decreases in positive affect. There is a large body of research that has demonstrated that not suppressing emotions (i.e., expression)

leads to better health outcomes or dissipates the negative effects in the long term (e.g., Chapman et al., 2013; Patel & Patel, 2019; Gross & Muñoz, 1995). However, a subsection of this research has found the exact opposite where venting (forceful expression) has led to an increase in that emotion, particularly anger (Parlami et al., 2010; Lohr et al., 2007; Bushman, 2002; Pennebaker & Graybeal, 2001). The results of Study 2 may add to the literature that expression in terms of writing about one TFBs, as one may do on social media, may have more negative effects in the short term but could be adaptive in the longer term. Future research will need to tease apart these aspects and identify the line between expression being adaptive or maladaptive, as there are gaps in the current literature.

9.3.2 How the Findings Relate to the Suppression-Incongruence Model

Since there were no statistically significant differences between the suppression, expression, and control conditions, this indicates that the experimental manipulation was unsuccessful, and I was unable to replicate previous findings (e.g., Baumeister et al., 1998, Yam, 2018). As such, there are three implications for my model. First, I had theorized and hypothesized that being asked to suppress would put the participants into an incongruent state, which would lead to an increase in rebound effects. Conversely, then those who were asked to express themselves were theorized to be in a congruent state with the underlying supposition that being able to express one's authentic TFBs removes any residual effects of reading the hacktivism article. Emotional expression has been found to have positive effects (Chapman et al., 2013). In addition to the manipulation being unsuccessful, the results could also indicate that expression was more forceful (i.e., venting) and that led to the increase in negative emotions, eliminating the manipulation effect in line with other research (Bushman, 2002; Lohr et al., 2007). In terms of my model then, suppression could lead to an incongruence through one aspect of one's TFBs being misaligned, which leads to rebound effects, as is hypothesized directly in my model. However, expression could also lead to a feeling of incongruence and more rebound effects if it creates a hyperawareness or individuals realize their TFBs cannot align with what they want with their behavior, and this may be why venting has been found to lead to more anger expression (Kennedy-Moore & Watson, 1999). The quotes from the participants that I discussed in Chapter 6 do suggest there may be a misalignment between their TFBs about the environment and the polluting they read about in the hacktivism article. This could also suggest that other

aspects, such as sensitivity to incongruence, may have an even more significant influence on rebound effects.

It could also be informative and more direct to experimentally place participants into an incongruent state manipulation by asking their opinion on a 4-point Likert scale and then randomly assign them to a congruent or incongruent expression condition. In the congruent condition, participants would be asked to write in line with their opinion; whereas those in the incongruent condition would be asked to write the opposing view of their true opinion. This would then allow experimenters to measure suppression x incongruence to differentiate between the two in terms of both objective and subjective rebound measures.

Second, as discussed in section 9.3.1, expression and suppression may both have negative or maladaptive effects. In terms of my model, I suggest that expression could bring about a hyperawareness of one's TFBs that result in rebound effects at least in the short term. Theoretically, expression could also lead to more extremism if the hyperawareness lasts for a longer duration. However, based on the research that shows emotional expression has positive longitudinal outcomes (Patel & Patel, 2019), I suggest expression may have affected the manipulation effects in Study 2 more than expression leading to longer term extremism. This is presented with the caveat that my study did not investigate long term effects; thus, the exact influence of expression cannot be ascertained within this thesis concretely.

Third, these results indicate that suppression can create an incongruence based on the overall affect states (lower positive and higher negative; Dryman & Heimberg, 2018) of those who engage in regular suppression, but it may not necessarily be sufficient in and of itself to create incongruence in all situations. Moreover, expression can create congruence, but it is not necessarily guaranteed to create a congruent state. I suggest that in my model sensitivity to incongruence is a vital aspect that can help determine when someone feels incongruence. Cognitive flexibility and proclivity for antisociality may be facets that influence not only how much incongruence can be tolerated but also if they feel incongruent. For instance, if expression is beneficial in the long term and someone is less sensitive to incongruence, this could explicate why some individuals choose prosocial routes and continue to find prosocial outlets rather than choosing the antisocial route or initially prosocial then leading to antisocial outlets. The results of this study highlight some of the limitations within the complex process of extremism.

9.4 Overview of Findings from Study 3

Study 3 is the only study in this thesis to examine behavioral suppression in any form, as the other three studies focus solely on cognitive aspects of my model. In Study 3, I looked at how the Dark Tetrad (D4; Machiavellianism, narcissism, psychopathy, and sadism), right-wing authoritarianism (RWA), and suppression predicted bystander support for real-world examples of SSE. The forms of SSE that were investigated were violent SSE (army violently ending peaceful protests), intergovernmental agreements that financially support SSE (arms deal between two countries, where the arms were used to kill citizens), non-violent SSE (prosecuting those going against the government's wishes), and political policies that could instigate SSE (targeting marginalized people in a country).

Overall, I found that being higher on the D4 and RWA increased one's susceptibility to sympathizing towards SSE. By using four real world examples, I could examine the nuances of the varying forms of SSE as well as increasing the ecological validity of the cross-sectional design. The results showed that each form of SSE had its own unique predictors, indicating that there are nuances in each form of SSE. I also conducted analysis on an aggregate score, condensing the various SSE forms into one singular form of extremism. However, this aggregate model had different predictors, indicating each form is nuanced with its own set of predictors but, taken together, creates its own predictors that may allow for interventions on a broader scale. Other research on extremism, though not SSE, has found that each type of extremism does have unique predictors (Clemmow et al., 2020; Morgades-Bamba et al., 2020).

9.4.1 Contributions to Research

Historically, the most destructive examples of SSE occur when there are both top-down and bottom-up initiatives, often with feedback loops (Snyder, 1981). For example, government initiatives influence how citizens react; citizens then "interpret" the top-down orders and act accordingly, and governments officially implement what citizens had interpreted as the "correct" behaviors. Germany during the Nazi regime is the quintessential example of this. Many believe that the Nazis enacted their genocidal plans in a top-down manner. However, most citizens were sensitive and resistant at least in the earlier stages (Tetreault thesis, 2006). When new initiatives were met with public outcry and push back, the regime would alter its policies. One example of this centers on the veterans of WWI, who were of Jewish decent. Initially, they were not exempted from deportation to concentration camps; however, the public resistance to this policy

was strong enough for the Nazis to rescind the policy, albeit temporarily. Similarly, when citizens went beyond the “orders” of the policies, the Nazi regime was quick to implement these extreme actions as official policies, especially any actions that encouraged the social isolation of Jewish citizens, such as boycotting businesses. This bottom-up aspect influenced Study 3 and highlights the novelty of the research and results. Whereas most research focuses on perpetrators, this study focused on sympathizers and those who are more likely to tolerate or otherwise indicate bystander support for the four forms of SSE in this study without direct engagement. Passive bystanders or sympathizers and even those who just “turn a blind eye” greatly influence how extreme behaviors can spread and be endorsed by others, and this study contributes to a better understanding of this phenomenon in the literature on this area.

Study 3 investigated a variety of forms of SSE. Often, it is not until the final stages of SSE (e.g., military massacres, genocides, extrajudicial killings) that people begin to take notice of the issue. While the final stages are crucial to investigate, I specifically examined earlier steps in the process before it reaches that level of extreme behavior (e.g., the policy and psychosocial shifts that precede such events). Cognitive shifts precede extremist behavior, thus investigating policies that could incite SSE later or policies that could increase the feelings of being ostracized that lead them to more extremist TFBs and/or behavior. This aligns with previous research that demonstrated second generation citizens who experience discrimination have an increased likelihood of participating in antisocial behavior (Vaughn et al., 2014). While I do not suggest that being higher on a dark personality can lead a person to be an actor of extremist behavior, as others have discussed (Corner et al., 2021), the findings from this study do suggest that being higher on the dark personalities could indicate a susceptibility to being a supportive bystander of SSE. More research is needed to confirm these results since it is the first study that looked at SSE from this angle.

9.4.2 How the Findings Relate to the Suppression-Incongruence Model

Based on the findings that higher scores on Machiavellianism, psychopathy, and sadism were associated with more suppression use and being higher on these traits predicted more bystander support for various forms of SSE, I found partial support for my model. These results suggest that these three dark personalities could experience regular incongruence, and this incongruence could lead to hyperawareness of situations that would trigger the person to aggress or support aggression, such as SSE. Their higher suppression use also supports my model and

could explain why, at least in part, those higher on Machiavellianism, psychopathy, and sadism are more likely to respond dogmatically (Chabrol et al., 2020). If they remain in a constant state of suppression and incongruence to function better in society compared to their clinical counterparts, they may not have the resources to be flexible to find other ways to respond, leading to more extreme behavior *if* triggered (Jones & Paulhus, 2010). I argue that, once triggered, these personalities have the propensity to demonstrate more extremist support of SSE.

Two facets of my model that could influence the path and speed towards extremism—proclivity for antisociality and sensitivity to incongruence—were tested in Study 3. The dark personalities, as I had hypothesized based on previous research, have been found to be at an increased risk of partaking in antisocial behavior (Tetreault et al., 2021; Chabrol et al., 2020; Morgades-Bamba et al., 2020; Buckels et al., 2013). In totality, the findings provide evidence to suggest that the proclivity for antisociality predicts more bystander support for extremist behavior, as my model hypothesized. However, being higher on a dark personality was insufficient in and of itself to always predict more bystander support for SSE. I argue the second individual difference facet of sensitivity to incongruence could be explaining why different dark personalities showed bystander support for some, but not all, of the various types of SSE. I argue the individual triggers of the dark personalities increase the sensitivity to incongruence. Thus, once triggered by the scenario, the sensitivity to the incongruence between their TFBs and the situation becomes heightened and needs to be rectified, and this led to more dogmatic responses, which in turn increased bystander support for that form of SSE. This may explain why those higher on the dark personalities who were not triggered by the situation, despite having an increased proclivity for antisociality, did not support that form of SSE. Ultimately, without being triggered, they may have been able to tolerate the incongruence more and, thus, shown less bystander support for that type of extremist behavior.

The results from this study demonstrate that there are limitations to my model in regard to narcissism and RWA in terms of suppression use. Narcissism may be a unique dispositional trait in the D4 where people higher on this characteristic may be less likely to engage in cognitive or behavioral suppression. Due to the core characteristics of self-aggrandizement, sense of entitlement, along with a lack of self-awareness (Jones & Neria, 2015), it does indicate they would not generally engage in suppression. Those higher on RWA may not engage in suppression under the current political and social climate, which is experiencing a more populist

right-wing swing, potentially emboldening them and removing the need to suppress their TFBs or behavior (Merelli, 2019). However, they could engage in suppression if the political climate were different. Such research cannot be done at present, but raises a valid question whether suppression use and incongruence have some temporal constraints or sensitivities with dispositional traits. It could be that those higher on RWA have a sensitivity to incongruence, rather than suppression use, which increases their susceptibility to support SSE. My model is not, and was not theorized to be, a panacea to explain all possible variance for SSE or other forms of extremism. There will be those who use suppression that do not support or engage in SSE and those who do not use suppression who support and engage in SSE. This could explain why suppression by itself was not a direct predictor of increased SSE support in most models. Overall, there is support for the suppression-incongruence model in that some of the dark personalities do engage in suppression, and all may be sensitive to incongruence that may increase their susceptibility towards supporting extremist behavior, such as SSE.

9.5 Overview of Findings from Study 4

Study 4 investigated risk and protective factors for a proclivity for more extreme cognitions (i.e., conspiracy mentality or thinking in conspiratorial terms), as extreme cognitions generally precede extreme behavior (Chabrol et al., 2020). While Study 2 evaluated the effects of cognitive suppression, Study 4 evaluated the extent to which suppression could predict and be a risk factor for proclivity for more extreme cognitions along with other traits known to increase or decrease cognitive rigidity and dispositional traits. I argued that having more cognitive rigidity would make individuals susceptible to more extreme cognitions, and conversely, cognitive flexibility would be a protective factor from extreme cognitions. Additionally, cognitive rigidity could make it more challenging for individuals to adapt to new situations and information and, as such, would be in a higher state of incongruence, predicting more conspiracy mentality. Guided by the results from Study 3, I again investigated the dark personalities, as they are often found to think and respond in dogmatic (i.e., cognitively rigid) ways, and included collective narcissism as a more macro level of narcissism that may be more predictive than trait narcissism. The factors I hypothesized would increase cognitive rigidity were the D4, RWA, collective narcissism, and suppression use. The factors that I theorized would increase cognitive flexibility and, in turn, less conspiracy mentality were higher critical thinking and stronger sense of self. I found partial support for the hypotheses where higher collective narcissism, suppression use,

RWA (authority/order), and critical thinking (engagement) were significant predictors in the model.

9.5.1 Contributions to Research

I recruited a large multi-national sample to investigate the proclivity for thinking in conspiratorial terms. Given the content of the measure for conspiracy mentality includes macro-level concepts involving international organizations conspiring, it was important to evaluate predictors from a multinational sample. Much like hacktivism, conspiracy theories are widespread on the Internet, and it is those that gain significant attention and engagement that become the most widely endorsed (Cinelli et al., 2022; Theocharis et al., 2021; Grimes, 2020). Thus, assessing one's proclivity to think in conspiratorial terms at a global level examined this phenomenon from a more ecologically valid perspective.

A second advantage of recruiting a large sample was being able to evaluate the dimensionality of the dark personalities with two different samples recruited separately. The Dark Tetrad is a well-researched constellation of dispositional traits. However, there have been other researchers who have raised questions regarding their dimensionality, particularly with Machiavellianism and psychopathy not holding as unique constructs (Siddiqi et al., 2020). My findings add to this concern. I suggest that research on the Dark Tetrad should assess the dimensionality with an exploratory factor analysis before further analysis is conducted. As with Study 3 of this thesis, the triggers based on previous research of the dark personalities (e.g., Jones & Paulhus, 2010, 2011) were not consistently in line with my findings, which may highlight some of the limitations in the current understanding of the dark personalities and their reactions. This may be in part due to the multi-national sample, highlighting the need for more cross-cultural research into these individual differences to determine if the scales need to be recalibrated to detect cultural sensitives, as other research has found with other dispositional traits (Cooke et al., 2005), or if the dark personalities manifest differently in various cultures.

9.5.2 How the Findings Relate to The Suppression Incongruence Model

Based on the findings of Study 4, there is support for the idea that cognitive rigidity increases susceptibility towards the proclivity for extreme cognitions. Similar to Study 3, there is evidence to partially support my model that sensitivity to incongruence may be influencing how the dark personality dispositional traits (collective narcissism and RWA-authority/order) predicted conspiratorial mentality. I also suggest that cognitive rigidity through those

dispositional traits, as well as regular suppression use, could explain why they are significant predictors in the causal model. As with Study 3, I argue that the content of the items in the measure (the CMQ) triggered these dispositional traits to respond dogmatically (i.e., cognitive rigidity), which then predicted the conspiratorial mentality. Cognitive flexibility allows people to “bend” to new situations or new/contradictory information. The ability to bend then could create more congruence, which in turn decreases the sensitivity to incongruence, predicting less extremism, as hypothesized by my model. Thus, if an individual higher on a dark personality were triggered, I would expect them to be sensitive to the incongruence between TFBs or emotions, and that would elicit a dogmatic or cognitively rigid response towards more extremism.

Suppression, to the best of my knowledge, had not been considered previously in regard to conspiratorial thinking, and it was the strongest predictor, suggesting that regular cognitive suppression use is a susceptibility of more extreme cognitions. This provides evidence in support of a key principle of my model, whereby suppression leads to an incongruence, and this incongruence leads to either a hyperawareness or ego depletion, resulting in a rebound effect. Suppression use was assessed with a measure that focused on cognitive suppression (Wegner & Zanakos, 1994). This needs further evaluation if cognitive suppression predicts more cognitive extremism while behavioral suppression predicts more (support of) behavioral suppression.

My findings also demonstrate some limitations to my model. The first, in regard to both Study 3 and Study 4 is that my model cannot predict which dispositional traits will be triggered. As discussed in Chapter 8, critical thinking is a counter-intuitive finding that does not support the hypotheses. Higher critical thinking was anticipated to decrease the sensitivity to incongruence while simultaneously increasing cognitive flexibility. Both facets were theorized to predict decreased, not increased, extremism. This indicates other factors, such as affective reactions, could be influencing the sensitivity to incongruence. My model does not hypothesize which factors or combination of factors will influence sensitivity to incongruence that will ultimately predict more extremism. However, the findings indicate that sensitivity to incongruence and cognitive rigidity are more nuanced, meaning some, but not all, dispositions or traits that increase cognitive rigidity or sensitivity to incongruence will predict more extremism. More research is needed in order to tease apart these nuances and better understand how multiple

dispositional traits and traits interact to determine whether one more heavily influences the prediction of more extremism (or not).

9.6 Summary of the Suppression-Incongruence Model

With such a dynamic and multifaceted process as radicalization and extremism, no conceptual model will be all-encompassing, especially considering none can be fully empirically investigated with high ecological validity. As with other theories and frameworks, many individuals could be considered at high-risk for extremism, resulting in many false positives. This highlights that my model was developed to investigate dispositional, behavioral, and situational factors, rather than as a risk assessment tool.

In toxic situations, such as genocides and military massacres, individual differences often strongly emerge—those who are resilient to the extreme behavior, those who follow orders, and those who behave extremely. Suppression and incongruence theories as well as most of the extant theories on extremism alone cannot explain how individuals in a very homogenous group (e.g., Battalion 101 of the German Nazis; Browning, 1998; Goldhagen et al., 2006; US army at My Lai, “John Wayne” in the Stanford prison experiment) with exposure to near-identical situational influences exhibit drastic individual differences. Some can remain resilient to extremist ideology and/or behavior over an extended period (i.e., years) in situations where there is very limited opportunity for freedom of choice. As a result, I believe proclivity for antisociality and sensitivity to incongruence in my model add to suppression, incongruence, and extant theories of extremism. Based on the findings, there is partial support for this with the dark personalities predicating more state-sponsored extremism bystander support and more conspiracy mentality proclivity. I argue that, when individuals higher on those dispositional traits are triggered, the proclivity for antisociality and sensitivity to incongruence emerge, predicting greater sympathies for antisocial behavior and conspiracy mentality. This also demonstrates limitations with my model in that it can be challenging to determine what will trigger and push individuals beyond their threshold tolerance for incongruence. Additionally, based on Study 1’s results where participants may have suppressed their objective morality to keep the alignment with their pre-existing beliefs on the environment, predicting more willingness to support hacktivists, these findings suggest suppression can be used to retain one’s congruence. While the model was designed to be bidirectional (i.e., incongruence can lead to suppression and suppression can lead to incongruence), I had not anticipated that suppression may be used as a

method (consciously or subconsciously) to stay congruent. This aspect can and should be incorporated into my model from a theoretical perspective. The results with critical thinking (engagement) predicting more conspiracy mentality from Study 4 may also be demonstrating this suppression-to-congruence facet. This could indicate that critical thinking may not be a strong protective factor when the topic or content aligns pre-existing beliefs, as individuals may suppress their critical thinking skills against information when the new information already aligns with their beliefs. Other researchers have found that individuals utilize critical thinking more frequently when new information goes against their pre-existing beliefs (Stupnisky et al., 2018), and this could provide support for this suppression-to-congruence aspect of the model. Future research could investigate other individual differences that are suppressed in order to retain congruence, and how this could lead to more bystander support for extremism.

My model focuses on the how, over the why or what, in that I theorized the underlying psychological mechanisms that lead individuals to (support) more extremism. I have theorized and found partial support that there are predispositions that will make some more susceptible to extremism (dark personalities and suppression use). The dark personalities, in particular the Dark Tetrad, have been well examined in antisocial behavior and terrorism (see Corner et al., 2021 for a meta-analytic review). In their review, they found that while psychopathy was one of the most examined dispositions in its relationship with terrorism, it is not consistently found and may only be an indirect predictor. In Study 3, I found psychopathy to be a significant predictor in sympathies towards two out of 11 SSE subquestions. Thus, the results are in line with the meta-analysis. In Study 4, the psychopathic items did not hold their dimensionality and combined with Machiavellianism. In Corner and colleagues' meta (2021), they found that Machiavellianism, out of the D4, was the second strongest predictor of terrorism. The results in Study 3 and 4 do not support this finding. Though Machiavellianism in Study 3 predicted three out of 11 subquestions on SSE.

A key difference between my studies and Corner and colleagues' (2021) meta-analytic results is that I investigated bystander support for extremism, not perpetration of terrorism, and this makes it harder to compare our findings concretely. The biggest criticism that came out of the meta-analysis was that many of the quantitative studies could not draw causation and were thus excluded from the meta-analysis. This could highlight a bias. Given the nature of the topic, extremism or terrorism, it is near impossible to design ecologically valid true experiments where

causality can be drawn due to ethical considerations. This is also a limitation with many other adjacent fields on aggression research, such as intimate partner violence, where studies cannot randomly assign participants to perpetration conditions. However, qualitative studies struggle with generalizability between perpetrators and forms of extremism/terrorism. This is not a battle between quantitative and qualitative research in this field. It is important to recognize both forms' strengths and limitations and address the gaps that fall between both. With the suppression-incongruence model, I attempted to create a model that incorporated the pathways and processes that lead to (support of) extremism while still including dispositional traits, traits known to increase or decrease cognitive rigidity, and behavioral proclivities that could amalgamate models that were developed from quantitative and qualitative research.

Studies 3 and 4 have inconsistent results regarding suppression, as it was a significant predictor in predicting conspiracy mentality (Study 4) but not for sympathies towards SSE (Study 3). These findings may arise from the measure that was used, which focused exclusively on regular cognitive suppression and, as such, may not be sufficient to measure behavioral suppression. This may explicate the inconsistent findings. This is something that needs to be addressed with future research. Moreover, I do not yet know, from empirical evidence, whether other dispositional traits could demonstrate sensitivity to incongruence that will inhibit or facilitate the extremist process, or whether a combination of dispositional traits will determine this. While this is an area of research that has been investigated in this thesis, and I have suggested that the dark personalities have more susceptibility (as they have a proclivity for antisociality and being more sensitive to incongruence), the model itself does not stipulate which predispositions impact the radicalization process, and more investigation into this is needed.

As with the predispositions, while my model emphasizes interplay between situational forces and one's authentic selves, it does not address which situational influences are more effective in implementing support of extremist views and behavior. Other models highlighted previously (e.g., general strain theory, general aggression model, coercive radicalization) have provided theoretical explanations for these while the current model focused on the process of *how* suppression-incongruence can force individuals to choose antisocial strategies. Additionally, while the model contains prosocial and antisocial pathways, I do not yet know which pathway an individual will choose or why some would be able to remain on the prosocial path regardless of the level of incongruence/suppression they experience if they are unable to bring about

significant change. Based on the findings, I suggest that an individual's sensitivity to incongruence may play a vital role in first the prosocial pathway initially being chosen but also not becoming more extreme if the actions do not bring about the change they want with their prosocial efforts. Despite these limitations, I feel the plasticity of my model, as well as the allowance of both internal and external factors to influence the radicalization process, provides a more holistic and unifying view of the extremism process.

9.7 Implications

My model and results could be applied to stochastic terrorism—"the incitement of a violent act through public demonization of a group or individual" (Amman & Meloy, 2021, p. 3)—in two ways. First, the results have demonstrated that there is bystander support for policies that demonize or segregate already marginalized portions of the population by those who have a proclivity of antisociality as was found in the SSE Danish example of indoctrinating babies of immigrants in Study 3. The bystander support does not indicate those who would partake in violent acts. However, the bystander support could indicate there is a potential susceptibility to engage in violent extremism under the right conditions. The pertinence of the research on policy shifts that garner support from those higher on the dark personalities was highlighted when Sweden announced on August 5, 2022, they were going to implement the Danish policy and restrict non-Nordics to 50% in so-called "trouble areas" (Euro-Med Human Rights Monitor, 2022). This policy has the potential to further isolate an already marginalized segment of the population, and the effects of this may be the opposite of what the policies are intended to do.

From a theoretical perspective, my model provides a framework to potentially integrate extant models and theories of extremism. For instance, the initially prosocial route to antisocial route could incorporate frustration-aggression theory (Berkowitz, 1989), and general strain theory (Agnew, 2010) is incorporated into the rebound effects of my model, as discussed in Chapter 2. This can first allow for a more holistic understanding of the extremism process and second lead to earlier interventions in the community.

While previous research has found that suppression can lead to more physical stress (e.g., raised blood pressure; Cardi et al., 2021), and expression has shown to prevent aggressive outbursts (Vohs et al., 2010), my data suggest the latter needs more empirical evidence. For research and clinical application, expressing or venting one's feelings could lead to a hyperawareness that could have as negative of outcomes as suppression. This raises the question

of where the line is between benefiting from expressing one's authentic TFBs, emotions, or behaviors and having this expression lead to negative effects. However, there are interventional programs, such as Emotion-Based Prevention Program, which focus on at-risk young children to develop their emotional competence (Izard et al., 2008). Research has found that this program was able to decrease children's displays of negative emotions and internalizing negative behaviors (e.g., anxiety, being withdrawn), and these improvements were especially true for children who came from more stressful homes (Finlon et al., 2015). This highlights that interventions that help younger people cope with negative emotions and expressing them in appropriate ways are effective with improving well-being. My results could inform programs, such as Emotion-Based Prevention Program, in encouraging congruency with TFBs, emotions, and behavior for more adaptive outcomes.

Another aspect of this is how governments approach and interact with protesters. During 2022, there were several protests around public health mandates and other policies, such as immigration (Williams & Paperny, 2022; Slater, 2022). The Canadian and Irish governments with their respective protests chose not to meet with the protesters, as some were violent and disruptive. Having an outlet for the protestors to have their concerns heard perhaps could have dissipated some of the issues and calmed the situations down faster. However, there is a fine line between expression and venting or giving a platform to those who are hoping to engage in extremist behavior. While expression of their concerns could result in ending the protests sooner, there is also the possibility that this expression could escalate into venting, which could then result in more anger expression. These types of situations are challenging for governments to navigate on when allowing expression could deescalate the situation and when it could escalate it. Allowing people to display disagreement to policies in a peaceful manner is a fundamental aspect of democracy, and governments could deescalate potentially tense situations by meeting with smaller groups of individuals to validate their concerns even if policies based on those meetings do not change.

Beyond the clinical implications of interventions for extremism and other areas that I have discussed throughout the thesis, another implication could be to other aggression research. For instance, there are aspects of suppression x incongruence in intimate partner violence and its cyclical abuse pattern—tension building, abuse, contrition (Dutton, 2006). My model and findings could present a new angle to incorporate into pre-existing therapies and programs for

intimate partner violence perpetrators. Additionally, the results could be applied to other clinical treatments for anxiety and emotion dysregulation where intrusive thoughts are key characteristics.

9.7.1 Potential Intervention Points

The findings from this thesis do not directly inform specific interventions but do draw attention to some relevant processes that could be explored further. The ultimate goal with interventions would be to help individuals redirect any effects from incongruence into a prosocial outlet and to validate what people experience. Allowing the incongruent TFB or behavior to be expressed in any constructive outlet (e.g., sports, art classes, music) may be beneficial at alleviating the inner turmoil the incongruence may have caused. A redirection in this case could dissipate the incongruence because emotion over-regulation has been shown to lead to aggression (Robertson et al., 2012). Even a validation of the true TFBs an individual is experiencing could be beneficial in handling the effects of any incongruence, as validation can assist in emotional regulation (Carson-Wong et al., 2018). Conversely, suppression could lead to antisocial externalizing behaviors, such as developing more radicalized ideology and sympathizing and supporting (violent) extremist behavior.

Another opportunity to intervene could be when an individual has initially chosen prosocial activities, but they then escalate into more antisocial actions. For example, an individual who initially peacefully protested but then escalated into participating in violent protests once the peaceful ones were seen as ineffective in bringing about change. On that route, interventions may still be beneficial, as they may be more open to other prosocial ideology since they chose that route initially. Linking my findings to include in programs like countering violent extremism interventions, which often work with people who were formerly involved in extremism (Lewis & Marsden, 2021), could be useful. Many of these programs take a macro and micro level approach, including individual (e.g., dispositional), social-ecological factors (e.g., socioeconomic status), and situational factors (e.g., political barriers) to the community interventions, and my suppression-incongruence findings could potentially add another aspect to their models.

9.8 Limitations

9.8.1 Threats to Ecological Validity

In addition to the limitations that were outlined for each of the four studies individually, there are also general limitations to highlight. First, I tested bystander support or sympathies towards extremism and the proclivity for more extreme cognitions (i.e., conspiracy mentality). Ethically, as with all aggression research, participants cannot be manipulated into participating in highly ecological extremist behavior.

One of the core aspects this thesis aimed to investigate is bystander support (i.e., bottom-up) because, without this type of passive support, extremist behavior such as hacktivism and state-sponsored extremism would fail to affect change and would be less toxic. However, bystander support does not necessarily equate with or lead to participation in violent extremism; and this should be investigated in future research. As previous research has demonstrated that individuals express TFBs differently online than they do in person (Sular, 2004; Grejdanus et al., 2020), and all studies save the pilot of Study 2 were conducted online, future research could investigate if the predictors of online bystander support can be extrapolated to in-person studies.

9.8.2 Methodological Limitations

Since this thesis examined bystander support for behavior and not actual behavior, this aspect of the suppression-incongruence model now needs to/ be tested. Next, the current work focused on cognitive suppression and on dispositional traits that tend to engage in behavioral suppression; however, the suppression measure used in Studies 2-4 contained items that examined one facet of suppression. This allowed for consistency across the studies. It was also important to measure cognitive suppression because I was investigating TFBs towards various actors in extremism rather than if an individual engaged in behavioral suppression. Future research should investigate if being asked to suppress behavior leads to more extreme behavior.

Lastly, recruiting online presented the opportunity to collect data from wider (non-student only) populations, and this approach successfully recruited participants from multiple countries and from a much wider age range. Unfortunately, however, my samples were still mostly Western, Educated, industrialized, rich, and democratic (WEIRD). Therefore, the results may not be generalizable to other populations, and collection from different populations should be considered.

9.8.3 COVID-19 Impacts on this Thesis

COVID-19 and the subsequent public health guidelines and restrictions altered the methodology of the thesis from Study 2 onwards (Study 1 and the pilot of Study 2 were not impacted). In this section, I will specifically discuss how the methodology changed from the original design and the limitations that result directly from these necessary changes.

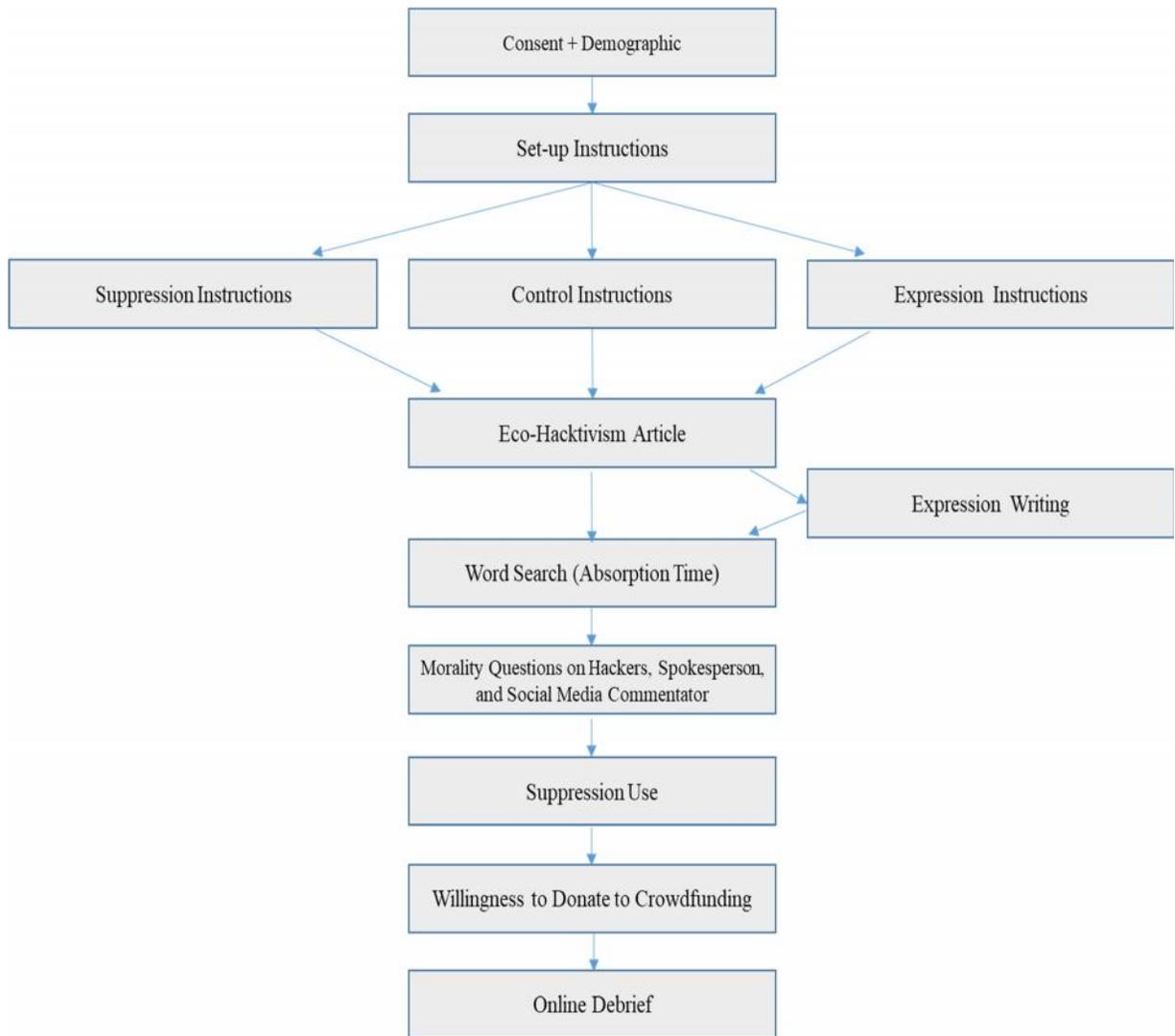
The initial design of this thesis was to have three of the four experiments be true experiments rather than cross-sectional. Study 2 of this thesis was to be a full study pilot and to serve as the basis for Studies 3 and 4. Study 2 was intended to be run exactly as it was, except conducted in the laboratory with more scientific control over the environment. In this original design, participants were to hold a counter in their non-dominant hand and click each time they had an intrusive TFB. This method would have been less disruptive than making a tick mark on a piece of paper with their dominant hand, as was done in the online version, as this would not have distracted participants from the task at hand and kept the manipulation instructions (of suppression/expression) more salient. All materials in Study 2 would have been presented in paper format in the laboratory. This would have prevented some of the variation experienced by participants (i.e., different size screens, other distractions such as noise or music), and the word search could have been completed normally rather than the heavily modified online version (having to list the first letter and last letter of each target word). The original design would have simplified the word search task, making it less cognitively demanding, which in turn would have theoretically allowed for more intrusive thoughts. One advantage of completing the task online, however, was that a delay could be built into the timing with which participants were presented with the information, in an attempt to even out the time differences it would take to complete the entire experiment, as the expression condition had an extra task to perform (writing out their thoughts on the hacktivism article). Once the results were analyzed, it emerged that the online format contained too many extraneous variables that diminished the manipulation outside of the laboratory.

Originally, Study 2 was intended to be the first study in a two-study design (see Figure 9.2), where the first would demonstrate the presence of rebound effects and the second would investigate how these rebound effects would lead to more bystander support for extremism. The second full study of Study 2 was to keep the three conditions (suppression, expression, no instructions) but remove the rebound dependent variables (both the objective and subjective) and

include the morality questions and willingness to donate to crowdfunding campaign from Study 1. This two-part study planned to directly test cognitive suppression, leading to an incongruence, which in turn would lead to more support of extremism (hactivism) and provide demonstrable evidence to support my model.

Figure 9.2

Original Design of Study 2

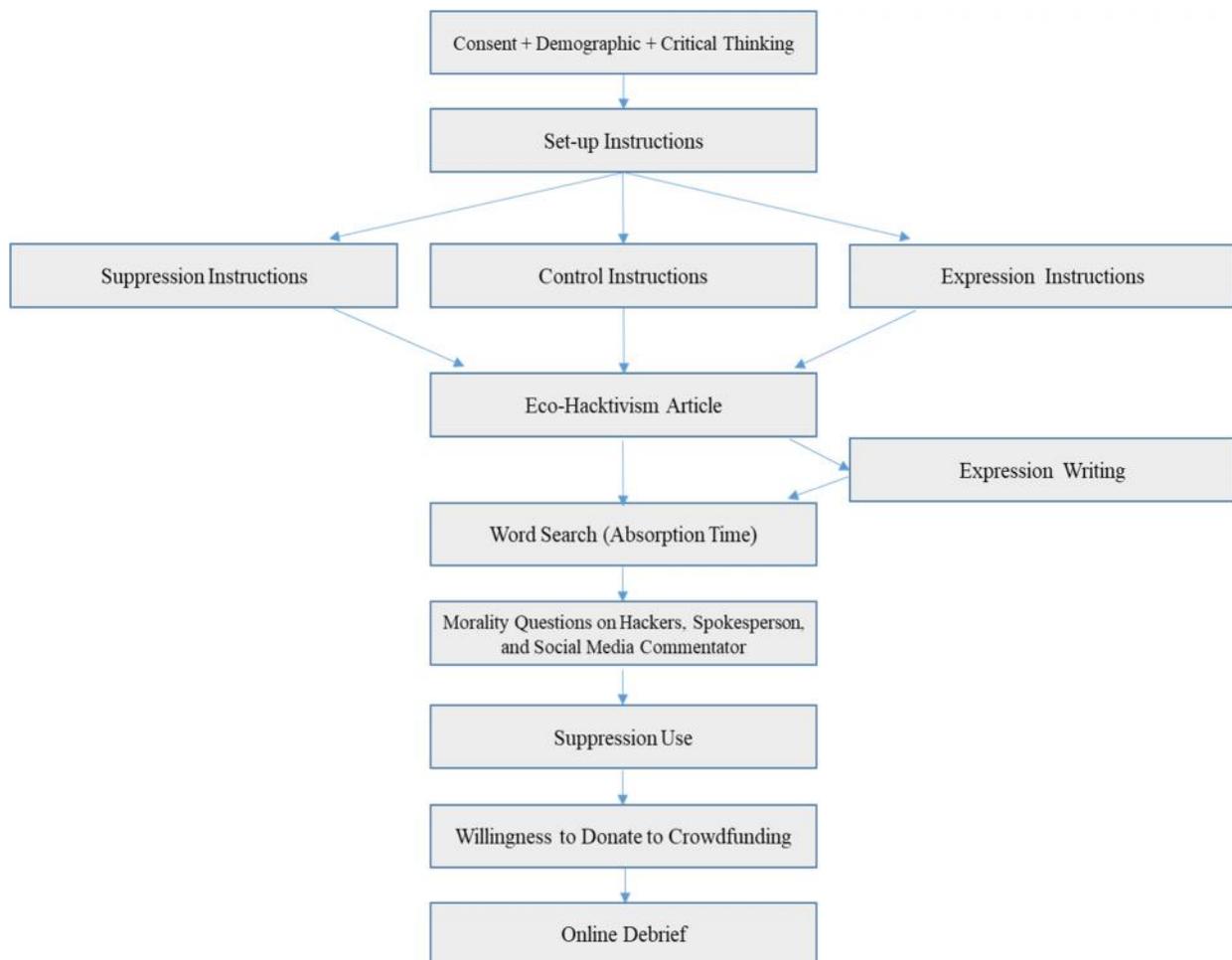


Original Study 3 was to scaffold onto Original Study 2. The methodology and protocol were to be identical except it would also include critical thinking measures (see Figure 9.3). Critical thinking would have been included as it is often believed to be an individual difference

that provides individuals with cognitive flexibility to minimize suppression and incongruence effects, which in turn could decrease extreme behavior or support of extreme behavior. By using the paradigm from Study 2, critical thinking could have been assessed without changing any other variables, allowing me to compare the explained variance added more closely in line with the previous study. In terms of my model, this would have tested how well a potential protective factor (critical thinking) would insulate against suppression, incongruence, and extremism, and the results would have had clearer implications for interventional and educational work.

Figure 9.3

Original Design of Study 3

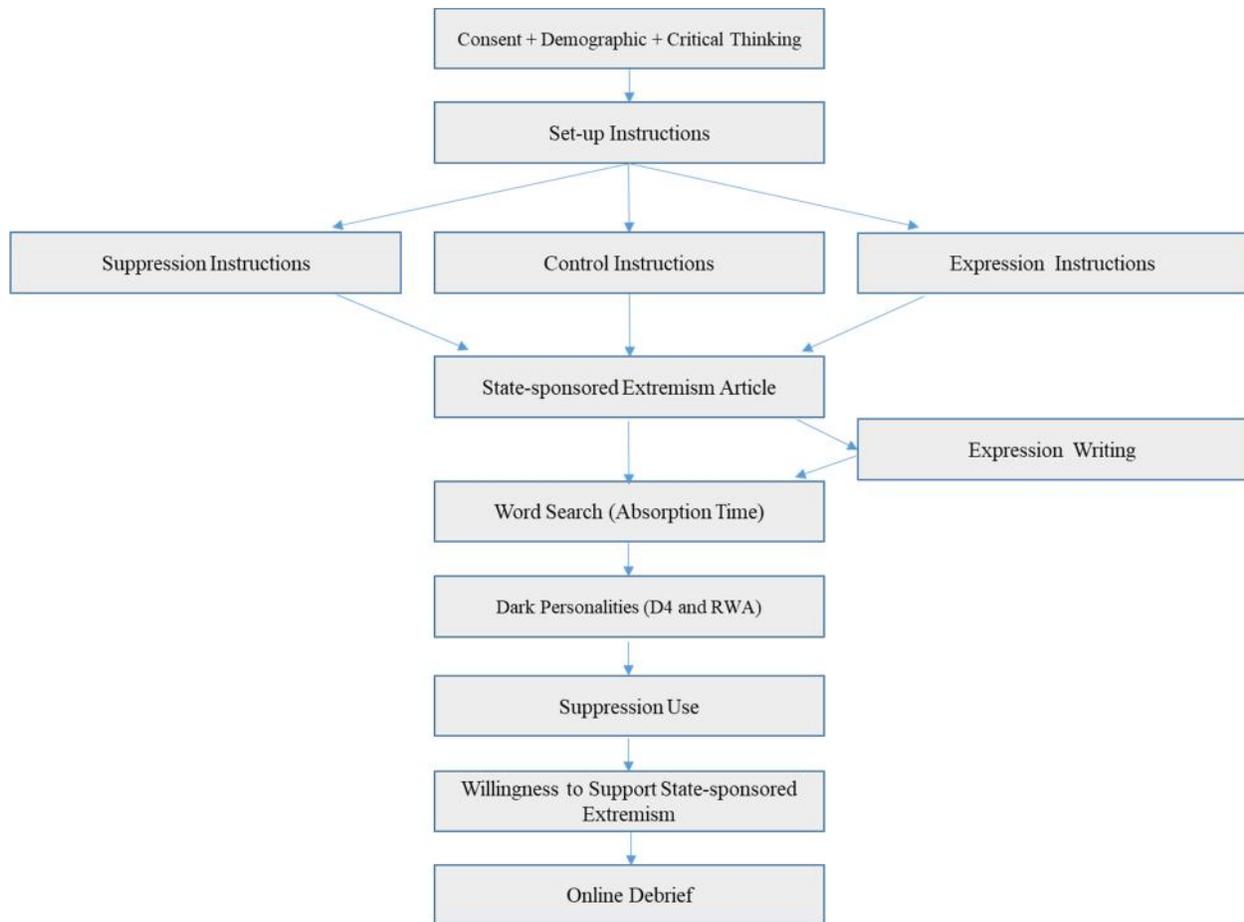


Originally, Study 4 would have investigated critical thinking and SSE under the same paradigm as the previous studies (see Figure 9.4). The aim of the original Study 4 was to test if

scoring high on critical thinking would minimize the suppression and incongruence effects in a new area of extremism. In the original thesis plan, Studies 1 to 3 would have investigated hacktivism (which has a prosocial element to it) while the original Study 4 would have investigated four forms of SSE (where none of the vignettes had a prosocial element). The four forms of SSE would have been the same ones used in the current version of Study 3, as presented in this thesis, except their random assignment would have presented the opportunity to examine the extent to which critical thinking could be a protective factor against various forms of extremism. The original methodology also included the dark personalities to determine their influence on sympathies and support towards SSE. These elements together could have helped to demonstrate wider generalizability and ecological validity if critical thinking had led to less support of extremism (whether prosocial or not), as it would then have contributed more strongly to the evidence base to better inform interventions.

Figure 9.4

Original Design of Study 4



The most significant limitation of having to pivot the research to adhere to COVID-19 public health guidelines (and the online format having too little experimental control) is the lack of being able to draw causation from my results. This would have provided stronger, more robust evidence as to whether critical thinking could be effective in interventions, as well as providing evidence on other factors that could have influenced extremism. However, one unexpected benefit, as discussed previously, to the online cross-sectional format was the ability to recruit a larger number of participants on research areas that have previously had very little, if any, quantitative research.

9.9 Future Research

In investigating the suppression-incongruence model and the results from the empirical studies, several potential future areas of research have arisen. Much of the research in this thesis has filled knowledge gaps in areas with very little quantitative data, and it would be beneficial to utilize these findings to further expand knowledge in the area of extremism as well as other

related areas. First, it would be worth investigating causality of the suppression-incongruence model, as was originally planned prior to the COVID-19 interruptions. This would further examine the model's strengths and limitations in explaining (support of) extremism. Building on that, future research should investigate this suppression-to-congruence predicting more extremism aspect. In the existing literature and in my hypotheses, suppression and incongruence are inextricably linked; however, suppression-to-congruence is a new facet. Being able to understand which aspects or dispositions individuals are willing to suppress to stay congruent to their authentic selves may help tease apart phenomena, such as conspiracy theory endorsement and potentially offering insight into why evidence-based clinical therapies have varying efficacies. Investigating suppression effects for those who must follow orders (i.e., military personnel) and are, thus, using regular suppression could help develop clinical treatment strategies. For instance, if an individual suppresses their morality to cope with the orders during active war, are there delayed effects, such as the development of post-traumatic stress disorder, as a rebound consequence?

It would also be of value to examine how an individual's pre-existing beliefs influence rigidity and dogmatism, and whether they then influence one's sensitivity to incongruence. This could be evaluated in terms of prejudice and bystander support for SSE, for instance. One potential study that emerged from the results of Study 3 would be to investigate prejudice (i.e., pre-existing beliefs) and where the SSE occurred. Specifically, prejudice could be examined by randomly assigning participants with the exact same SSE scenario implemented in the West versus the Middle East and to determine subconscious prejudice and differing levels of support based on geographical location. Based on the results from Study 3, I suspect the location of the scenario, even with the names of the countries removed, would influence acceptance or sympathies of the extremist behavior being described.

Another individual difference that could have a proclivity for antisociality and sensitivity to incongruence that could then predict sympathies towards different forms of extremism is negative emotionality (NEM; Tellengen & Waller, 2008; Ehrensaft et al., 2006). Researchers have found that NEM has two factors—lack of conscience and emotions and anxiety, distrust, and paranoia—which link to justifications of preemptory strikes of violence (Moffitt, 2001). People high on NEM have also been found to have low thresholds for stress and are honed to perceive others as potential enemies (Wilson et al., 2021; Patrick et al., 2002; Waller et al.,

1996). These attributes create the potential for people high on NEM to sympathize with some forms of violent extremism. As suppression has been demonstrated to increase negative affect, it could result in people higher on NEM being even more impacted by suppression, ultimately making them more extreme in their opinions and sympathizing towards perpetrators of violent extremism. NEM has theoretical overlapping features with the Dark Tetrad, but NEM is a unique set of dispositional traits that would be worth exploring in terms of their sensitivity to extremism and sympathies towards it.

10.0 Conclusion

There are no all-encompassing models for extremism, yet the suppression-incongruence model put forth in this thesis has amalgamated and expanded on extant models to create a more holistic and dynamic approach to understanding the extremism process. This model does not delve into which external factors are the most effective at radicalizing, but it focuses on the processes that lead to suppression x incongruence because according to my model this increases the likelihood of radicalizing and supporting extremism. This new perspective provides opportunities for earlier interventions, especially by building resilience against the inner turmoil created by an incongruence between TFBs and behavioral expressions and by steering towards more prosocial activities to alleviate any incongruence. As with all theoretical models and frameworks in extremism research, this model cannot be tested fully for ethical concerns (i.e., researchers cannot risk being the catalyst for someone to radicalize). However, the psychological studies conducted to examine aspects of the model have predicted more bystander support for extremism. In Study 1, I found that moral connectedness to different actors involved in eco-hackivism predicted more willingness to donate to a crowdfunding campaign to support the hackers. Pre-existing beliefs about the importance of the environment predicted most moral connectivity to the actors involved in the hackivism in various ways, which in turn predicted more willingness to donate. This offers support for the suppression-incongruence model, as it appears participants who were concerned about the environment suppressed their morality to stay congruent with those TFBs. In Study 2, using the same eco-hackivism article from Study 1, an association was found between those who engaged in more regular suppression and those who reported more negative emotions before and after reading the hackivism article. This indicates that suppression use could heighten negative affect more when presented with negative news stories. In Study 3, being higher on the dark personalities (Machiavellianism, narcissism, psychopathy, sadism, and right-wing authoritarianism) predicted more bystander support for varying forms of SSE. The dark personalities have a theoretical underpinning of engaging in suppression to function within society, and those higher on Machiavellianism, psychopathy, and sadism were associated with more suppression use. Furthermore, those higher on the dark personalities may be more sensitive to feelings of incongruence and have a proclivity for antisociality once triggered, and these predicted more bystander support for SSE. In Study 4, facets that increased or decreased cognitive flexibility and their ability were found to predict

more extreme cognitions (i.e., proclivity for thinking in conspiratorial terms), and those higher on collective narcissism, right-wing authoritarianism (authority/order), suppression, and critical thinking (engagement) predicted more conspiracy mentality. These findings suggest that suppression and sensitivity to incongruence are involved in thinking in conspiratorial terms. The counter-intuitive finding that more critical thinking predicted more extreme cognitions demonstrates that critical thinking may not be a protective factor by itself against a proclivity for extreme cognitions. In summary, the findings across all four studies provide support for the incongruence-suppression model of extremism, and future research should continue to investigate the causality of the model. The model and the results from the four studies could facilitate evidence-based interventions for those who implement them and influence policy on how to approach extremism at a community and educational level. For instance, programs that work with macro and micro level factors to prevent extremism (Lewis & Marsdent, 2021) could investigate how emotional competence from the Emotion-Based Prevention Program studies (Finlon et al., 2015; Izard et al., 2004), and the results of this thesis provide a more holistic approach to community based interventions. This type of intervention would then follow both quantitative and qualitative studies and findings that intervention programs are often criticized for not including (Corner et al., 2021).

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Appendices

A. Study 1 Appendices

A.1 Eco-hacktivism Article

On January 10, 2019, international media reported that PRQ Chemicals, a Welsh State-owned oil production company based in Cardiff, had been dumping its excess plastic and micro-plastics into the Irish Sea. The plastics were washing up on local and international shores along with many marine animal carcasses that had died from choking on or ingesting these plastics. Environmental experts estimated that it would cost £30 million and a decade to clean up the illegal dumping.

On March 19, 2019, PRQ Chemicals were subject of a ransomware attack by a new group of environmental activists, hackers called Enviro-mous. The hackers were able to gain control over all of PRQ's computer systems and halt all production and distribution. The hackers promised to give PRQ their computer systems back once £40 million was paid, the cost of the cleanup and extra for other environmental causes in the area. While no one was physically harmed in the ransomware hack, PRQ lost an estimated £200 million in profit and had to lay off approximately 30% of its workforce until they regained control over their computer system, three months later. Enviro-mous issued a press release through a spokesperson on social media, Earth Defender @95Earth:

“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment. They have been dumping plastics for decades but finally got caught, and despite warnings of the harm they were causing by their own scientists, they continued to dump their waste into the waters we and marine life depend on. At some point, someone had to do something to get them to pay attention and stop their illegal practices. We felt we were in a good position to shine a light on their actions for the public and force them to take the environment, animals, and human lives seriously. The dumping cannot continue, and we forced them to stop.”

The spokesperson added that Enviro-mous would be doing a crowdfunding campaign to “out” other companies that were destroying the environment and other possible ransomware attacks if needed, so any financial support would be welcomed.

There has been strong support for the hackers on social media. For example, one Twitter user, @keepitclean87, in a thread showed their support:

“This is the govt [government] being the govt, again. They knew what was going on & looked the other way. #Greedy. It's 2019 and still happening. Our oceans are dying from plastic. If the govt still isn't listening, then we have to force them to. The attack made the govt do that! Good! 1/3

For those saying it wasn't an appropriate response, wake up! Someone had to do something! Standing up to the govt for the damage they're doing. Dumping does a lot more damage, and the ransomware hack was just to clean up the govt's mess anyway. 2/3

What water do you expect to drink from if it's all polluted? What the govt is doing to OUR water is FAR worse than hacking them to force them to do what's right. Where's the @gofundme campaign to donate? 3/3"

A.2 Morality Scale for Eco-hacktivists

Initial Items and Corresponding Ethical/Moral Categorization for the Activists

<u>Item</u>	<u>Category</u>
1. In general, do you feel Enviro-mous' actions were right?	Moral subjectivism
2. Do you think Enviro-mous made the company clean up in the right way?	Moral subjectivism
3. How much do you feel Enviro-mous' actions were irresponsible? (R)	Moral subjectivism
4. Do you think Enviro-mous' actions were right for Ireland?	Cultural relativism
5. Do you think Enviro-mous' actions helped protect Irish waters and environment?	Cultural relativism
6. Do you feel Irish people would support Enviro-mous and their actions?	Cultural relativism
7. Do you think Irish people would reject Enviro-mous' hacking? (R)	Cultural relativism
8. Do you trust Enviro-mous to use the money to clean up the oceans?	Ethical trust
9. Do you trust Enviro-mous to use the excess £10 million to clean up other environmental issues?	Ethical trust
10. Do you think Enviro-mous will hack for other purposes in the future? (R)	Ethical trust
11. Do you feel Enviro-mous has ulterior motives than making the government pay for the cleanup? (R)	Ethical trust
12. Do you feel Enviro-mous members are good people?	Virtue morality
13. How much do you think Enviro-mous members would be considered "good people" by others?	Virtue morality
14. Do you think Enviro-mous members have the qualities of virtuous people?	Virtue morality
15. How much do you feel EM members are dishonest? (R)	Virtue morality

Items 1-2, 4-5, 8-9, 12, and 14 were on the Altruism component. Items 6, 7, and 13 were on the Perceived subjective norms component. Items 10-11 were on the Questionable motivations component.

A.3 Morality Questions for the Spokesperson

Opinion Items for the Spokesperson

1. How much do you think you would like this person?
 2. How likely would you be willing to follow this person on social media?
 3. How much do you agree with this person?
 4. How much do you think you would do something similar to this person?
 5. How likely would you be to like or share this person's social media post?
 6. How intelligent do you think this person is?
 7. How well-informed do you think this person is?
 8. Do you feel this person has been educated?
 9. How much do you respect this person?
 10. How much would you criticize this person's social media post? (R)
 11. How much do you respect this person's opinion?
-

Items 6-11 were on the Virtue component. Items 1-2 and 4-5 were on the Social connectivity component.

A.4 Morality Questions for the Commentator

Opinion Items for the Commentator

1. How much do you think you would like this person?
 2. How likely would you be willing to follow this person on social media?
 3. How much do you agree with this person?
 4. How much do you think you would do something similar to this person?
 5. How likely would you be to like or share this person's social media post?
 6. How intelligent do you think this person is?
 7. How well-informed do you think this person is?
 8. Do you feel this person has been educated?
 9. How much do you respect this person?
 10. How much would you criticize this person's social media post? (R)
 11. How much do you respect this person's opinion?
-

Items 1, 3, and 6-11 were on the Virtue component. Items 2 and 4-5 were on the Intentional behavioral component.

A.5 Study 1 - Participant Exposure Materials

Information and Consent

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Purpose: The purpose of this study is to examine how social media impacts people

Time required: approximately 5-8 minutes

Study Procedures: You will be asked to read a newspaper article and then report your attitudes on personality measures. All of this will be conducted in an online format through a series of questionnaires.

Anonymity/Confidentiality: As with all research at National University of Ireland Galway, this project will be bound to comply with established requirements in relation to data confidentiality and security under GDPR. All electronic data will be held on government-grade encrypted IT equipment, and hard copy files will be stored in a locked filing cabinet in a senior lecturer's office.

Contact for information about the study: If you have any questions or desire further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary, and you may refuse to participate or withdraw from the study at any time by without jeopardy to any relationship you have with National University of Ireland Galway.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study.

Demographic Information

How old are you in years?

How do you identify? Female Male Prefer not to say Other

How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)?

Daily

Several time per week

Once per week

Less than once per week, but I still use social media

Never, I don't use social media

Please read the following news article.

On January 10, 2019, international media reported that PRQ Chemicals, a Welsh State-owned oil production company based in Cardiff, had been dumping its excess plastic and micro-plastics into the Irish Sea. The plastics were washing up on local and international shores along with many marine animal carcasses that had died from choking on or ingesting these plastics. Environmental experts estimated that it would cost £30 million and a decade to clean up the illegal dumping.

On March 19, 2019, PRQ Chemicals were subject of a ransomware attack by a new group of environmental activists, hackers called Enviro-mous. The hackers were able to gain control over all of PRQ's computer systems and halt all production and distribution. The hackers promised to give PRQ their computer systems back once £40 million was paid, the cost of the cleanup and extra for other environmental causes in the area. While no one was physically harmed in the ransomware hack, PRQ lost an estimated £200 million in profit and had to lay off approximately 30% of its workforce until they regained control over their computer system, three months later. Enviro-mous issued a press release through a spokesperson on social media, Earth Defender @95Earth:

“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment. They have been dumping plastics for decades but finally got caught, and despite warnings of the harm they were causing by their own scientists, they continued to dump their waste into the waters we and marine life depend on. At some point, someone had to do something to get them to pay attention and stop their illegal practices. We felt we were in a good position to shine a light on their actions for the public and force them to take the environment, animals, and human lives seriously. The dumping cannot continue, and we forced them to stop.”

The spokesperson added that Enviro-mous would be doing a crowdfunding campaign to “out” other companies that were destroying the environment and other possible ransomware attacks if needed, so any financial support would be welcomed.

There has been strong support for the hackers on social media. For example, one Twitter user, @keepitclean87, in a thread showed their support:

“This is the govt [government] being the govt, again. They knew what was going on & looked the other way. #Greedy. It's 2019 and still happening. Our oceans are dying from plastic. If the govt still isn't listening, then we have to force them to. The attack made the govt do that! Good! 1/3

For those saying it wasn't an appropriate response, wake up! Someone had to do something! Standing up to the govt for the damage they're doing. Dumping does a lot more damage, and the ransomware hack was just to clean up the govt's mess anyway. 2/3

What water do you expect to drink from if it's all polluted? What the govt is doing to OUR water is FAR worse than hacking them to force them to do what's right. Where's the @gofundme campaign to donate? 3/3"

In the next few sections, you will be asked questions based on the article. Have you finished reading the article? Yes, and I'm ready to continue

Thinking about the article you just read, please answer the following questions about your opinion on Enviro-mous.

Enviro-mous are the environmental activists who did the hacking.

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely).

1. In general, do you feel Enviro-mous' actions were right?
2. Do you think Enviro-mous made the company clean up in the right way?
3. How much do you feel Enviro-mous' actions were irresponsible? (R)
4. Do you think Enviro-mous' actions were right for Ireland?
5. Do you think Enviro-mous' actions helped protect Irish waters and environment?
6. Do you feel Irish people would support Enviro-mous and their actions?
7. Do you think Irish people would reject Enviro-mous' hacking? (R)
8. Do you trust Enviro-mous to use the money to clean up the oceans?
9. Do you trust Enviro-mous to use the excess £10 million to clean up other environmental issues?
10. Do you think Enviro-mous will hack for other purposes in the future? (R)
11. Do you feel Enviro-mous has ulterior motives than making the government pay for the cleanup? (R)
12. Do you feel Enviro-mous members are good people?
13. How much do you think Enviro-mous members would be considered "good people" by others?
14. Do you think Enviro-mous members have the qualities of virtuous people?
15. How much do you feel EM members are dishonest? (R)

Thinking about the article you just read, please answer the following questions about your opinion on Earth Defender. @95Earth

Earth Defender @95Earth, who gave the press release on social media, is the spokesperson for Enviro-mous.

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely).

1. How much do you think you would like this person?
2. How likely would you be willing to follow this person on social media?
3. How much do you agree with this person?
4. How much do you think you would do something similar to this person?
5. How likely would you be to like or share this person's social media post?
6. How intelligent do you think this person is?
7. How well-informed do you think this person is?
8. Do you feel this person has been educated?
9. How much do you respect this person?
10. How much would you criticize this person's social media post? (R)
11. How much do you respect this person's opinion?

Thinking about the article you just read, please answer the following questions about your opinion on @keepitclean87.

@keepitclean87 is the person on Twitter who offered support for the hack.

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely).

1. How much do you think you would like this person?
2. How likely would you be willing to follow this person on social media?
3. How much do you agree with this person?
4. How much do you think you would do something similar to this person?
5. How likely would you be to like or share this person's social media post?
6. How intelligent do you think this person is?
7. How well-informed do you think this person is?
8. Do you feel this person has been educated?
9. How much do you respect this person?
10. How much would you criticize this person's social media post? (R)
11. How much do you respect this person's opinion?

How willing would you be to donate to the crowdfunding campaign to support Enviro-mous and their cause? 1 (not at all) to 10 (completely).

Thank you

You have now completed the survey. Thank you for your participation.

If you have any questions or desire more information with respect to the study, you may contact the Primary Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at Kiran.sarma@nuigalway.ie

B. Study 2 Appendices

B.1 Final Word Search

Locate the words from the list below. Then give the first letter's position and the last letter's position. For example, for the word "CARPET," you would type a-6 for the first letter's position and a-11 for the last letter's position. The words can run horizontally, vertically, or diagonally both forwards and backwards.

Find all the words from the list that you can. Once you find them all or can't find any more, please click next. Do the best you can.

	1	2	3	4	5	6	7	8	9	10	11	12
a	F	R	I	N	C	C	A	R	P	E	T	T
b	F	R	I	N	G	E	E	R	R	R	I	I
c	I	K	E	Y	B	O	A	R	D	I	M	M
d	X	N	N	E	E	R	C	S	W	W	P	P
e	T	T	T	E	E	U	U	D	D	A	A	B
f	U	U	M	M	R	R	R	E	E	R	R	O
g	R	R	M	M	R	T	T	S	S	T	T	X
h	E	B	A	C	K	P	A	C	K	K	I	I
i	E	E	U	U	K	I	I	C	K	A	A	T
j	I	I	V	V	E	N	N	R	D	L	L	S
k	I	G	E	R	E	G	A	R	D	S	S	O
l	E	E	E	T	T	N	E	M	E	V	A	P

Word	First letter position	Last letter position
Carpet	a6	a11
Beige		
Box		
Desk		
Fixture		
Impartial		
Keyboard		
Pavement		
Post		
Screen		
Wire		

B.2 Study 2 Pilot - Participant Exposure Materials

Consent Form: Emotionality of Words

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUIG School of Psychology. Email: kiran.sarma@nuigalway.ie

Purpose: The purpose of this study is to examine people's reactions to certain words.

Study Procedures: You will be asked to rank 30 words on how you feel about them, ranging from 1 (very negative) to 5 (very positive).

Time required: 2-3 minutes

Anonymity/Confidentiality: No identifying or demographic information will be collected other than gender.

Remuneration/Compensation: There is no compensation for participating in this experiment.

Contact for information about the study: If you have any questions or desire further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without jeopardy to any relationship you have with the National University of Ireland Galway.

Your signature below indicates that you have received a copy of this consent form for your own records. Your signature indicates that you consent to participate in this study.

Participant Signature

Date

Printed Name of the Participant

Instructions:

Please indicate your gender? Male _____ Female _____ Other _____ Prefer not to say _____

Please indicate how you feel about each word by putting an **X** in the appropriate column

- 1- Very negative
- 2- A little negative
- 3- Neutral
- 4- A little positive
- 5- Very positive

	1 Very negative	2 A little negative	3 Neutral	4 A little positive	5 Very positive
Air					
Backpack					
Beige					
Box					
Carpet					
Cloud					
Computer					
Couch					
Curtain					
Desk					
Fringe					
Fingernail					
Fixture					
Impartial					
Jumper					
Keyboard					
Mauve					
Mobile					
Mug					
Notebook					
Paper					
Pavement					
Post					
Regards					
Screen					
Towel					
Trousers					
Watches					
Window					
Wire					

B.3 Study 2 – Control Condition: Participant Exposure Materials

Information and Consent Form: Social Media Impact

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Purpose: The purpose of this study is to examine how social media news impacts people.

Study Procedures: You will be asked to read a newspaper article, complete a word game, and then report your attitudes on personality measurements. All of this will be conducted in an online format through a series of questionnaires.

Time required: approximately 20 minutes

Remuneration/Compensation: If you agree to participate, you can win 1 of 3 Amazon gift cards of €50 (or equivalent value in your local currency) OR NUIG psychology course credit through SONA.

Anonymity/Confidentiality: All responses are confidential and anonymous. No documents will be created that link participants to their answers. The information you provide for a chance to win a gift card will be separated from your answers. In addition, as with all research at National University of Ireland Galway, this project will be bound to comply with established requirements in relation to data confidentiality and security under General Data Protection Regulation (GDPR). All electronic data will be held on government-grade encrypted IT equipment.

Contact for information about the study: If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary and you can refuse to participate or withdraw from the study at any time without any consequence.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study, and are above the age of 18.

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

Demographic Information

Please answer the following questions.

1. How do you identify.... Male Female Nonbinary Prefer not to say
2. How old are you (in years)? _____
3. How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still use social media; never, I don't use social media
4. How many hours do you usually spend on social media per week? _____
5. How often do you play word games (e.g., Words with Friends, crosswords, Word searches, scrabble, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still play word games; never, I don't play word games
6. What country do you live in currently?
7. What country did you live in growing up?

Instructions:

This study requires some concentration, so it will help if you are as free from distraction as possible. It's important not to listen to music, watch TV, or be distracted by other people. The whole study will take approximately 20 minutes. It can be done on a mobile phone, but it may be a bit easier on a tablet or computer.

For this study, you will need:

1. A pen or pencil
2. A piece of paper
3. A clear writing surface to work on

Do you have everything you need for the study? Select yes when you are ready. (yes/no)

Are you ready to continue? Select yes when you are ready to continue.

Please read the following article:

On January 10, 2019, international media reported that PRQ Chemicals, a Welsh State-owned oil production company based in Cardiff, had been dumping its excess plastic and micro-plastics into the Irish Sea. The plastics were washing up on local and international shores along with many marine animal carcasses that had died from choking on or ingesting these plastics. Environmental experts estimated that it would cost £30 million and a decade to clean up the illegal dumping.

On March 19, 2019, PRQ Chemicals were subject of a ransomware attack by a new group of environmental activists, hackers called Enviro-mous. The hackers were able to gain control over all of PRQ's computer systems and halt all production and distribution. The hackers promised to give PRQ their computer systems back once £40 million was paid, the cost of the cleanup and extra for other environmental causes in the area. While no one was physically harmed in the ransomware hack, PRQ lost an estimated £200 million in profit and had to lay off approximately 30% of its workforce until they regained control over their computer system, three months later. Enviro-mous issued a press release through a spokesperson on social media, Earth Defender @95Earth:

“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment. They have been dumping plastics for decades but finally got caught, and despite warnings of the harm they were causing by their own scientists, they continued to dump their waste into the waters we and marine life depend on. At some point, someone had to do something to get them to pay attention and stop their illegal practices. We felt we were in a good position to shine a light on their actions for the public and force them to take the environment, animals, and human lives seriously. The dumping cannot continue, and we forced them to stop.”

The spokesperson added that Enviro-mous would be doing a crowdfunding campaign to “out” other companies that were destroying the environment and other possible ransomware attacks if needed, so any financial support would be welcomed.

There has been strong support for the hackers on social media. For example, one Twitter user, @keepitclean87, in a thread showed their support:

“This is the govt [government] being the govt, again. They knew what was going on & looked the other way. #Greedy. It's 2019 and still happening. Our oceans are dying from plastic. If the govt still isn't listening, then we have to force them to. The attack made the govt do that! Good! 1/3

For those saying it wasn't an appropriate response, wake up! Someone had to do something! Standing up to the govt for the damage they're doing. Dumping does a lot more damage, and the ransomware hack was just to clean up the govt's mess anyway. 2/3

What water do you expect to drink from if it's all polluted? What the govt is doing to OUR water is FAR worse than hacking them to force them to do what's right. Where's the @gofundme campaign to donate? 3/3"

In the next part of the study, you'll be asked to do a puzzle and answer some questions using the keyboard.

While you're doing the puzzle, every time you have a thought, feeling, or idea about the article you've just read, please make a tick with your pen on the paper that is next to you at your area. At the end of the study, you will need to tell us how many ticks are on the paper, so it's important to try to be as accurate as possible.

It takes up to two minutes for the next page to load. Once it is ready, the arrow button will appear to proceed. Please do not refresh the survey.

Locate the words from the list below. Then give the first letter's position and the last letter's position. For example, for the word "CARPET," you would type a-6 for the first letter's position and a-11 for the last letter's position. The words can run horizontally, vertically, or diagonally both forwards and backwards.

Find all the words from the list that you can. Once you find them all or can't find any more, please click next. Do the best you can.

	1	2	3	4	5	6	7	8	9	10	11	12
a	F	R	I	N	C	C	A	R	P	E	T	T
b	F	R	I	N	G	E	E	R	R	R	I	I
c	I	K	E	Y	B	O	A	R	D	I	M	M
d	X	N	N	E	E	R	C	S	W	W	P	P
e	T	T	T	E	E	U	U	D	D	A	A	B
f	U	U	M	M	R	R	R	E	E	R	R	O
g	R	R	M	M	R	T	T	S	S	T	T	X
h	E	B	A	C	K	P	A	C	K	K	I	I
i	E	E	U	U	K	I	I	C	K	A	A	T
j	I	I	V	V	E	N	N	R	D	L	L	S
k	I	G	E	R	E	G	A	R	D	S	S	O
l	E	E	E	T	T	N	E	M	E	V	A	P

Word	First letter position	Last letter position
Carpet	a6	a11
Beige		
Box		
Desk		
Fixture		
Impartial		
Keyboard		
Pavement		
Post		
Screen		
Wire		

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

How many tick marks did you have on your paper (please add up and enter the total number of checks)?

Do you feel the number of ticks is accurate to how many thoughts, feelings, or ideas you had throughout the crossword? Select 1 (much fewer ticks than I felt) to 10 (much more ticks than I felt).

During the word search puzzle, did an idea or thought about the article get stuck in your head and you weren't able to get rid of it?

- No, I didn't get a thought or idea stuck in my head
- Yes, a thought or idea got stuck in my head right at the start
- Yes, a thought or idea got stuck in my head about part way through
- Yes, a thought or idea got stuck in my head past half way through
- Yes, a thought or idea got stuck in my head right at the end

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely)

1. Did you feel distracted by the information in the article throughout the study?
2. Did you find the information in the article impacted your performance on the Word search?
3. Did you find that you "day dreamed" about the information in the article throughout the study?

Please answer each question. Two to three sentences for each is enough.

1. Which thoughts did you have about the article throughout the study?
2. Which feelings did you have about the article throughout the study?

Don't take too long over individual questions; there are no 'right' or 'wrong' answers and no trick questions. The first answer that comes into your head is probably the right one for you. If you find some of the questions difficult, please give the answer that is true for you in general or for most of the time. Thinking about your everyday life, please rate your agreement to each item from 1 (strongly disagree) to 5 (strongly agree).

1. Strongly Disagree 2. Disagree 3. Neither Agree or Disagree 4. Agree 5. Strongly Agree

1. There are things I prefer not to think about.
2. Sometimes I wonder why I have the thoughts I do.
3. I have thoughts that I cannot stop.
4. There are images that come to mind that I cannot erase.
5. My thoughts frequently return to one idea.
6. I wish I could stop thinking about certain things.
7. Sometimes my mind races so fast I wish I could stop it.
8. I always try to put problems out of my mind.
9. There are thoughts that keep jumping into my head.
10. Sometimes I stay busy just to keep thoughts from intruding on my mind.
11. There are things that I try not to think about.
12. Sometimes I really wish I could stop thinking.
13. I often do things to distract myself from my thoughts.
14. I have thoughts that I try to avoid.
15. There are many thoughts that I have that I don't tell anyone.

Thank you for participating in our social media study.

Now looking back, did you recognize the article and have you participated in a similar study from us in early 2020? This is important for the statistical analysis only. (yes/no)

Thank you again for participating in the present study on media and social media and your opinions on such news. The present study tests whether being asked to suppress or express your thoughts, feelings, and ideas influence your reactions to media, social media, and the people involved in the news story.

If you know of any friends or acquaintances who are eligible to participate in this study, we'd like to ask you that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the questions can invalidate the results. We greatly appreciate your cooperation.

If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Do you consent to your answers being analyzed? Your answers are still anonymous and confidential.

- Yes
- No

B.4 Study 2 – Suppression Condition: Participant Exposure Materials

Information and Consent Form: Social Media Impact

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Purpose: The purpose of this study is to examine how social media news impacts people.

Study Procedures: You will be asked to read a newspaper article, complete a word game, and then report your attitudes on personality measurements. All of this will be conducted in an online format through a series of questionnaires.

Time required: approximately 20 minutes

Remuneration/Compensation: If you agree to participate, you can win 1 of 3 Amazon gift cards of €50 (or equivalent value in your local currency) OR NUIG psychology course credit through SONA.

Anonymity/Confidentiality: All responses are confidential and anonymous. No documents will be created that link participants to their answers. The information you provide for a chance to win a gift card will be separated from your answers. In addition, as with all research at National University of Ireland Galway, this project will be bound to comply with established requirements in relation to data confidentiality and security under General Data Protection Regulation (GDPR). All electronic data will be held on government-grade encrypted IT equipment.

Contact for information about the study: If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary and you can refuse to participate or withdraw from the study at any time without any consequence.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study, and are above the age of 18.

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

Demographic Information

Please answer the following questions.

8. How do you identify.... Male Female Nonbinary Prefer not to say
9. How old are you (in years)? _____
10. How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still use social media; never, I don't use social media
11. How many hours do you usually spend on social media per week? _____
12. How often do you play word games (e.g., Words with Friends, crosswords, Word searches, scrabble, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still play word games; never, I don't play word games
13. What country do you live in currently?
14. What country did you live in growing up?

Instructions:

This study requires some concentration, so it will help if you are as free from distraction as possible. It's important not to listen to music, watch TV, or be distracted by other people. The whole study will take approximately 20 minutes. It can be done on a mobile phone, but it may be a bit easier on a tablet or computer.

For this study, you will need:

1. A pen or pencil
2. A piece of paper
3. A clear writing surface to work on

Do you have everything you need for the study? Select yes when you are ready. (yes/no)
Are you ready to continue? Select yes when you are ready to continue.

Next, you're going to be reading a short newspaper article. Recent research has shown that reading and watching news clips on social media can bring up a lot of thoughts and feelings, and this has a significant negative impact on our health. One way that has been shown to help deal with news and stay healthy is to keep your emotions to yourself and try to ignore what you are thinking and feeling while interacting with the news.

Please read the following article:

On January 10, 2019, international media reported that PRQ Chemicals, a Welsh State-owned oil production company based in Cardiff, had been dumping its excess plastic and micro-plastics into the Irish Sea. The plastics were washing up on local and international shores along with many marine animal carcasses that had died from choking on or ingesting these plastics. Environmental experts estimated that it would cost £30 million and a decade to clean up the illegal dumping.

On March 19, 2019, PRQ Chemicals were subject of a ransomware attack by a new group of environmental activists, hackers called Enviro-mous. The hackers were able to gain control over all of PRQ's computer systems and halt all production and distribution. The hackers promised to give PRQ their computer systems back once £40 million was paid, the cost of the cleanup and extra for other environmental causes in the area. While no one was physically harmed in the ransomware hack, PRQ lost an estimated £200 million in profit and had to lay off approximately 30% of its workforce until they regained control over their computer system, three months later. Enviro-mous issued a press release through a spokesperson on social media, Earth Defender @95Earth:

“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment. They have been dumping plastics for decades but finally got caught, and despite warnings of the harm they were causing by their own scientists, they continued to dump their waste into the waters we and marine life depend on. At some point, someone had to do something to get them to pay attention and stop their illegal practices. We felt we were in a good position to shine a light on their actions for the public and force them to take the environment, animals, and human lives seriously. The dumping cannot continue, and we forced them to stop.”

The spokesperson added that Enviro-mous would be doing a crowdfunding campaign to “out” other companies that were destroying the environment and other possible ransomware attacks if needed, so any financial support would be welcomed.

There has been strong support for the hackers on social media. For example, one Twitter user, @keepitclean87, in a thread showed their support:

“This is the govt [government] being the govt, again. They knew what was going on & looked the other way. #Greedy. It's 2019 and still happening. Our oceans are dying from plastic. If the govt still isn't listening, then we have to force them to. The attack made the govt do that! Good! 1/3

For those saying it wasn't an appropriate response, wake up! Someone had to do something! Standing up to the govt for the damage they're doing. Dumping does a lot more damage, and the ransomware hack was just to clean up the govt's mess anyway. 2/3

What water do you expect to drink from if it's all polluted? What the govt is doing to OUR water is FAR worse than hacking them to force them to do what's right. Where's the @gofundme campaign to donate? 3/3"

In the next part of the study, you'll be asked to do a puzzle and answer some questions using the keyboard.

While you're doing the puzzle, every time you have a thought, feeling, or idea about the article you've just read, please make a tick with your pen on the paper that is next to you at your area. At the end of the study, you will need to tell us how many ticks are on the paper, so it's important to try to be as accurate as possible.

It takes up to two minutes for the next page to load. Once it is ready, the arrow button will appear to proceed. Please do not refresh the survey.

Locate the words from the list below. Then give the first letter's position and the last letter's position. For example, for the word "CARPET," you would type a-6 for the first letter's position and a-11 for the last letter's position. The words can run horizontally, vertically, or diagonally both forwards and backwards.

Find all the words from the list that you can. Once you find them all or can't find any more, please click next. Do the best you can.

	1	2	3	4	5	6	7	8	9	10	11	12
a	F	R	I	N	C	C	A	R	P	E	T	T
b	F	R	I	N	G	E	E	R	R	R	I	I
c	I	K	E	Y	B	O	A	R	D	I	M	M
d	X	N	N	E	E	R	C	S	W	W	P	P
e	T	T	T	E	E	U	U	D	D	A	A	B
f	U	U	M	M	R	R	R	E	E	R	R	O
g	R	R	M	M	R	T	T	S	S	T	T	X
h	E	B	A	C	K	P	A	C	K	K	I	I
i	E	E	U	U	K	I	I	C	K	A	A	T
j	I	I	V	V	E	N	N	R	D	L	L	S
k	I	G	E	R	E	G	A	R	D	S	S	O
l	E	E	E	T	T	N	E	M	E	V	A	P

Word	First letter position	Last letter position
Carpet	a6	a11
Beige		
Box		
Desk		
Fixture		
Impartial		
Keyboard		
Pavement		
Post		
Screen		
Wire		

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

How many tick marks did you have on your paper (please add up and enter the total number of checks)?

Do you feel the number of ticks is accurate to how many thoughts, feelings, or ideas you had throughout the crossword? Select 1 (much fewer ticks than I felt) to 10 (much more ticks than I felt).

During the word search puzzle, did an idea or thought about the article get stuck in your head and you weren't able to get rid of it?

- No, I didn't get a thought or idea stuck in my head
- Yes, a thought or idea got stuck in my head right at the start
- Yes, a thought or idea got stuck in my head about part way through
- Yes, a thought or idea got stuck in my head past half way through
- Yes, a thought or idea got stuck in my head right at the end

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely)

1. Did you feel distracted by the information in the article throughout the study?
2. Did you find the information in the article impacted your performance on the Word search?
3. Did you find that you "day dreamed" about the information in the article throughout the study?
4. Did you feel you were successful at being able to ignore and keep your thoughts and emotions to yourself throughout the study?

Please answer each question. Two to three sentences for each is enough.

1. Which thoughts did you have about the article throughout the study?
2. Which feelings did you have about the article throughout the study?

Don't take too long over individual questions; there are no 'right' or 'wrong' answers and no trick questions. The first answer that comes into your head is probably the right one for you. If you find some of the questions difficult, please give the answer that is true for you in general or for most of the time. Thinking about your everyday life, please rate your agreement to each item from 1 (strongly disagree) to 5 (strongly agree).

1. Strongly Disagree 2. Disagree 3. Neither Agree or Disagree 4. Agree 5. Strongly Agree

1. There are things I prefer not to think about.
2. Sometimes I wonder why I have the thoughts I do.
3. I have thoughts that I cannot stop.
4. There are images that come to mind that I cannot erase.
5. My thoughts frequently return to one idea.
6. I wish I could stop thinking about certain things.
7. Sometimes my mind races so fast I wish I could stop it.
8. I always try to put problems out of my mind.
9. There are thoughts that keep jumping into my head.
10. Sometimes I stay busy just to keep thoughts from intruding on my mind.
11. There are things that I try not to think about.
12. Sometimes I really wish I could stop thinking.
13. I often do things to distract myself from my thoughts.
14. I have thoughts that I try to avoid.
15. There are many thoughts that I have that I don't tell anyone.

Thank you for participating in our social media study.

Now looking back, did you recognize the article and have you participated in a similar study from us in early 2020? This is important for the statistical analysis only. (yes/no)

Thank you again for participating in the present study on media and social media and your opinions on such news. The present study tests whether being asked to suppress or express your thoughts, feelings, and ideas influence your reactions to media, social media, and the people involved in the news story.

If you know of any friends or acquaintances who are eligible to participate in this study, we'd like to ask you that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the questions can invalidate the results. We greatly appreciate your cooperation.

If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Do you consent to your answers being analyzed? Your answers are still anonymous and confidential.

Yes

No

B.5 Study 2 – Expression Condition: Participant Exposure Materials

Information and Consent Form: Social Media Impact

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Purpose: The purpose of this study is to examine how social media news impacts people.

Study Procedures: You will be asked to read a newspaper article, complete a word game, and then report your attitudes on personality measurements. All of this will be conducted in an online format through a series of questionnaires.

Time required: approximately 20 minutes

Remuneration/Compensation: If you agree to participate, you can win 1 of 3 Amazon gift cards of €50 (or equivalent value in your local currency) OR NUIG psychology course credit through SONA.

Anonymity/Confidentiality: All responses are confidential and anonymous. No documents will be created that link participants to their answers. The information you provide for a chance to win a gift card will be separated from your answers. In addition, as with all research at National University of Ireland Galway, this project will be bound to comply with established requirements in relation to data confidentiality and security under General Data Protection Regulation (GDPR). All electronic data will be held on government-grade encrypted IT equipment.

Contact for information about the study: If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary and you can refuse to participate or withdraw from the study at any time without any consequence.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study, and are above the age of 18.

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

Demographic Information

Please answer the following questions.

15. How do you identify.... Male Female Nonbinary Prefer not to say
16. How old are you (in years)? _____
17. How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still use social media; never, I don't use social media
18. How many hours do you usually spend on social media per week? _____
19. How often do you play word games (e.g., Words with Friends, crosswords, Word searches, scrabble, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still play word games; never, I don't play word games
20. What country do you live in currently?
21. What country did you live in growing up?

Instructions:

This study requires some concentration, so it will help if you are as free from distraction as possible. It's important not to listen to music, watch TV, or be distracted by other people. The whole study will take approximately 20 minutes. It can be done on a mobile phone, but it may be a bit easier on a tablet or computer.

For this study, you will need:

1. A pen or pencil
2. A piece of paper
3. A clear writing surface to work on

Do you have everything you need for the study? Select yes when you are ready. (yes/no)
Are you ready to continue? Select yes when you are ready to continue.

Next, you're going to be reading a short newspaper article. Recent research has shown that reading and watching news clips on media and social media can bring up a lot of thoughts and feelings, and this has a significant negative impact on our health. One way that has been shown to help deal with news and stay healthy is to express what you are thinking and feeling by writing your thoughts and feelings down after interacting with the news. After reading the article, you will be given the opportunity to write down your thoughts, opinions, feelings, and ideas about the article.

Please read the following article:

On January 10, 2019, international media reported that PRQ Chemicals, a Welsh State-owned oil production company based in Cardiff, had been dumping its excess plastic and micro-plastics into the Irish Sea. The plastics were washing up on local and international shores along with many marine animal carcasses that had died from choking on or ingesting these plastics. Environmental experts estimated that it would cost £30 million and a decade to clean up the illegal dumping.

On March 19, 2019, PRQ Chemicals were subject of a ransomware attack by a new group of environmental activists, hackers called Enviro-mous. The hackers were able to gain control over all of PRQ's computer systems and halt all production and distribution. The hackers promised to give PRQ their computer systems back once £40 million was paid, the cost of the cleanup and extra for other environmental causes in the area. While no one was physically harmed in the ransomware hack, PRQ lost an estimated £200 million in profit and had to lay off approximately 30% of its workforce until they regained control over their computer system, three months later. Enviro-mous issued a press release through a spokesperson on social media, Earth Defender @95Earth:

“While this hack may seem too extreme for some, it pales in comparison to the damage PRQ was doing to the oceans and environment. They have been dumping plastics for decades but finally got caught, and despite warnings of the harm they were causing by their own scientists, they continued to dump their waste into the waters we and marine life depend on. At some point, someone had to do something to get them to pay attention and stop their illegal practices. We felt we were in a good position to shine a light on their actions for the public and force them to take the environment, animals, and human lives seriously. The dumping cannot continue, and we forced them to stop.”

The spokesperson added that Enviro-mous would be doing a crowdfunding campaign to “out” other companies that were destroying the environment and other possible ransomware attacks if needed, so any financial support would be welcomed.

There has been strong support for the hackers on social media. For example, one Twitter user, @keepitclean87, in a thread showed their support:

“This is the govt [government] being the govt, again. They knew what was going on & looked the other way. #Greedy. It's 2019 and still happening. Our oceans are dying from plastic. If the govt still isn't listening, then we have to force them to. The attack made the govt do that! Good! 1/3

For those saying it wasn't an appropriate response, wake up! Someone had to do something! Standing up to the govt for the damage they're doing. Dumping does a lot more damage, and the ransomware hack was just to clean up the govt's mess anyway. 2/3

What water do you expect to drink from if it's all polluted? What the govt is doing to OUR water is FAR worse than hacking them to force them to do what's right. Where's the @gofundme campaign to donate? 3/3"

What are your thoughts, feelings, ideas, and opinions about the article you just read? Please try to be as specific as possible, and do take a few moments to think about your answer before writing. There are no right or wrong answers.

In the next part of the study, you'll be asked to do a puzzle and answer some questions using the keyboard.

While you're doing the puzzle, every time you have a thought, feeling, or idea about the article you've just read, please make a tick with your pen on the paper that is next to you at your area.

At the end of the study, you will need to tell us how many ticks are on the paper, so it's important to try to be as accurate as possible.

Locate the words from the list below. Then give the first letter's position and the last letter's position. For example, for the word "CARPET," you would type a-6 for the first letter's position and a-11 for the last letter's position. The words can run horizontally, vertically, or diagonally both forwards and backwards.

Find all the words from the list that you can. Once you find them all or can't find any more, please click next. Do the best you can.

	1	2	3	4	5	6	7	8	9	10	11	12
a	F	R	I	N	C	C	A	R	P	E	T	T
b	F	R	I	N	G	E	E	R	R	R	I	I
c	I	K	E	Y	B	O	A	R	D	I	M	M
d	X	N	N	E	E	R	C	S	W	W	P	P
e	T	T	T	E	E	U	U	D	D	A	A	B
f	U	U	M	M	R	R	R	E	E	R	R	O
g	R	R	M	M	R	T	T	S	S	T	T	X
h	E	B	A	C	K	P	A	C	K	K	I	I
i	E	E	U	U	K	I	I	C	K	A	A	T
j	I	I	V	V	E	N	N	R	D	L	L	S
k	I	G	E	R	E	G	A	R	D	S	S	O
l	E	E	E	T	T	N	E	M	E	V	A	P

Word	First letter position	Last letter position
Carpet	a6	a11
Beige		
Box		
Desk		
Fixture		
Impartial		
Keyboard		
Pavement		
Post		
Screen		
Wire		

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word.

Rate how you feel right now (that is, at the present moment).

Use the following scale to record your answers:

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

_____ Enthusiastic	_____ Interested	_____ Determined	_____ Excited
_____ Inspired	_____ Alert	_____ Active	_____ Strong
_____ Proud	_____ Attentive	_____ Scared	_____ Afraid
_____ Upset	_____ Distressed	_____ Jittery	_____ Nervous
_____ Ashamed	_____ Guilty	_____ Irritable	_____ Hostile

How many tick marks did you have on your paper (please add up and enter the total number of checks)?

Do you feel the number of ticks is accurate to how many thoughts, feelings, or ideas you had throughout the crossword? Select 1 (much fewer ticks than I felt) to 10 (much more ticks than I felt).

During the word search puzzle, did an idea or thought about the article get stuck in your head and you weren't able to get rid of it?

- No, I didn't get a thought or idea stuck in my head
- Yes, a thought or idea got stuck in my head right at the start
- Yes, a thought or idea got stuck in my head about part way through
- Yes, a thought or idea got stuck in my head past half way through
- Yes, a thought or idea got stuck in my head right at the end

There are no right or wrong answers, so try to be as honest and accurate as possible. For each question, answer on a scale of 1 (not at all) to 10 (completely)

1. Did you feel distracted by the information in the article throughout the study?
2. Did you find the information in the article impacted your performance on the Word search?
3. Did you find that you "day dreamed" about the information in the article throughout the study?
4. When you expressed your thoughts, feelings, or ideas about the article, did you think you expressed them fully?

Please answer each question. Two to three sentences for each is enough.

1. Which thoughts did you have about the article throughout the study?
2. Which feelings did you have about the article throughout the study?

Don't take too long over individual questions; there are no 'right' or 'wrong' answers and no trick questions. The first answer that comes into your head is probably the right one for you. If you find some of the questions difficult, please give the answer that is true for you in general or for most of the time. Thinking about your everyday life, please rate your agreement to each item from 1 (strongly disagree) to 5 (strongly agree).

- 1 There are things I prefer not to think about.
- 2 Sometimes I wonder why I have the thoughts I do.
- 3 I have thoughts that I cannot stop.
- 4 There are images that come to mind that I cannot erase.
- 5 My thoughts frequently return to one idea.
- 6 I wish I could stop thinking about certain things.
- 7 Sometimes my mind races so fast I wish I could stop it.
- 8 I always try to put problems out of my mind.
- 9 There are thoughts that keep jumping into my head.
- 10 Sometimes I stay busy just to keep thoughts from intruding on my mind.
- 11 There are things that I try not to think about.
- 12 Sometimes I really wish I could stop thinking.
- 13 I often do things to distract myself from my thoughts.
- 14 I have thoughts that I try to avoid.
- 15 There are many thoughts that I have that I don't tell anyone.

Thank you for participating in our social media study.

Now looking back, did you recognize the article and have you participated in a similar study from us in early 2020? This is important for the statistical analysis only. (yes/no)

Thank you again for participating in the present study on media and social media and your opinions on such news. The present study tests whether being asked to suppress or express your thoughts, feelings, and ideas influence your reactions to media, social media, and the people involved in the news story.

If you know of any friends or acquaintances who are eligible to participate in this study, we'd like to ask you that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the questions can invalidate the results. We greatly appreciate your cooperation.

If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Do you consent to your answers being analyzed? Your answers are still anonymous and confidential.

Yes

No

C. Study 3 Appendices

C.1 State-sponsored Extremism Vignettes and Subquestions

Vignette	Subquestion	Analysis
1. A leader of a western country sent out their army to end peaceful protests. The army was instructed to use as much force as necessary as long as the protests ended. This made the protests extremely violent, but the leader was re-elected after the protests were shut down.	a. To what extent do you agree with the leader's decision?	Supplementary Material
	b. To what extent do you agree with the army's actions?	Manuscript
2. A western country and a Middle East country have an arms' deal worth billions of euros yearly for military equipment, including heavy machine guns and artillery systems. The Middle Eastern country is using these guns and artillery systems specifically to target and kill civilians in a neighboring country to regain control over the area. Academics and policy advisors have asked the western government to stop selling the arms, but that government has refused saying ending the contract is too costly.	a. To what extent do you agree with the arms' deal?	Supplementary Material
	b. To what extent do you agree with the Middle Eastern country's use of the arms to regain control over the area?	Manuscript
	c. To what extent do you agree with the western country keeping the arms' contract?	Supplementary Material
3. Volunteers have been using a small rescue boat to save refugees who are stuck on ships that are in distress in the Mediterranean trying to land in Europe. The volunteer's boat is used to keep the refugees safe while a bigger rescue boat comes to take them to mainland Europe. European authorities seized the volunteer's boat and are investigating the volunteers for human trafficking. An independent investigation determined that the volunteers were only saving lives, but the European prosecutor is refusing to give them back the boat and is still investigating them as criminals. Without these volunteers, more refugees are dying in the Mediterranean.	a. To what extent do you agree with the volunteers?	Manuscript
	b. To what extent do you agree with the prosecutor seizing the boat?	Supplementary Material
	c. To what extent do you agree with the prosecutor still investigating the volunteers as criminals?	Supplementary Material
4. Throughout a lot of the Western world, there has been an influx of immigrants. Some are concerned that Western values will disappear. One method to look at this came out of one northern European country. This country decided that immigrants in low-income 'ghettos' were not becoming European enough, so they created a law to ensure all babies become European in culture and attitude. All babies born to low-income non-European parents at the age of 1 will be separated from their families for a minimum of 25 hours a week, not including nap time. During this mandatory separation, the children get lessons in 'European values.' Babies born to	a. To what extent do you agree with this northern European government's methods?	Supplementary Material
	b. To what extent would you agree with this type of program being done in your country?	Manuscript

European parents do not have to send their children to school until the age of 6.		
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C.2 Study 3 Participant Exposure Materials

Information and Consent

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Purpose: The purpose of this study is to examine how different people interpret governmental policies or actions.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Study Procedures: You will be asked to give some demographic information, read four short real governmental policies and rate your agreement with them, and then report your attitudes on personality measurements. All of this will be conducted in an online format through a series of questionnaires. Some example questions are: "It's not wise to tell your secrets;" "I enjoy hurting my partner during sex (or pretending to);" "Payback needs to be quick and nasty." You will also be asked a question about wearing face masks.

Time required: approximately 20 minutes

Anonymity/Confidentiality: All responses are anonymous and confidential. No documents will be created that link you to your answers. The information you provide for a chance to win a gift card will be separate from your answers. In addition, as with all research at NUI Galway, this project will be bound to comply with the European Union's established requirements in relation to data confidentiality and security under General Data Protection Regulation (GDPR). All electronic data will be held on government-grade encrypted IT equipment.

Remuneration/Compensation: If you agree to participate, you can win 1 of 3 Amazon gift cards of €50 (or equivalent value in your local currency).

Contact for information about the study: If you have any questions or desire further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary, and you may refuse to participate or withdraw from the study at any time by closing out of the survey and then your data will no be analyzed.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study, and are above the age of 18.

Demographic Information

Please answer the following questions.

1. How do you identify.... Male Female Nonbinary Prefer not to say
2. How old are you (in years)? _____
3. What is your highest level of completed education? Some high school, high school, undergraduate degree, Master's degree, PhD
4. To which of the following do you consider yourself to belong? White, Irish Traveller, Black, Asian, Other (including mixed background)
5. How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still use social media; never, I don't use social media
6. What country do you live in currently?
7. What country did you live in growing up?

In this next section, you will read four short scenarios. These scenarios are real ways different governments have handled or reacted to some current issues. After each scenario, you will be asked to answer a couple of questions on a scale from 1 (not at all) to 10 (completely).

A leader of a western country sent out their army to end peaceful protests. The army was instructed to use as much force as necessary as long as the protests ended. This made the protests extremely violent, but the leader was re-elected after the protests were shut down.

1. To what extent do you agree with the leader's decision?
2. To what extent do you agree with the army's actions?

A western country and a Middle East country have an arms' deal worth billions of euros yearly for military equipment, including heavy machine guns and artillery systems. The Middle Eastern country is using these guns and artillery systems specifically to target and kill civilians in a neighboring country to regain control over the area. Academics and policy advisors have asked the western government to stop selling the arms, but that government has refused saying ending the contract is too costly.

1. To what extent do you agree with the arms' deal?
2. To what extent do you agree with the Middle Eastern country's use of the arms to regain control over the area?
3. To what extent do you agree with the western country keeping the arms' contract?

Volunteers have been using a small rescue boat to save refugees who are stuck on ships that are in distress in the Mediterranean trying to land in Europe. The volunteer's boat is used to keep the refugees safe while a bigger rescue boat comes to take them to mainland Europe. European authorities seized the volunteer's boat and are investigating the volunteers for human trafficking. An independent investigation determined that the volunteers were only saving lives, but the European prosecutor is refusing to give them back the boat and is still investigating them as criminals. Without these volunteers, more refugees are dying in the Mediterranean.

1. To what extent do you agree with the volunteers?
2. To what extent do you agree with the prosecutor seizing the boat?
3. To what extent do you agree with the prosecutor still investigating the volunteers as criminals?

Throughout a lot of the Western world, there has been an influx of immigrants. Some are concerned that Western values will disappear. One method to look at this came out of one northern European country. This country decided that immigrants in low-income 'ghettos' were not becoming European enough, so they created a law to ensure all babies become European in culture and attitude. All babies born to low-income non-European parents at the age of 1 will be separated from their families for a minimum of 25 hours a week, not including nap time. During this mandatory separation, the children get lessons in 'European values.' Babies born to European parents do not have to send their children to school until the age of 6.

1. To what extent do you agree with this northern European government's methods?
2. To what extent would you agree with this type of program being done in your country?

Instructions: Please indicate how much you agree with each of the following statements 1 (disagree strongly) to 5 (agree strongly)

Machiavellianism

1. It's not wise to tell your secrets
2. I like to use clever manipulation to get my way
3. Whatever it takes, you must get the important people on your side
4. Avoid direct conflict with others because they may be useful in the future
5. It's wise to keep track of information that you can use against people later
6. You should wait for the right time to get back at people
7. There are things you should hide from other people to preserve your reputation
8. Make sure your plans benefit yourself, not others
9. Most people can be manipulated

Narcissism

1. People see me as a natural leader
2. I hate being the centre of attention (R)
3. Many group activities tend to be dull without me
4. I know that I am special because everyone keeps telling me so
5. I like to get acquainted with important people
6. I feel embarrassed if someone compliments me (R)
7. I have been compared to famous people
8. I am an average person (R)
9. I insist on getting the respect I deserve

Psychopathy

1. I like to get revenge on authorities
2. I avoid dangerous situations (R)
3. Payback needs to be quick and nasty
4. People often say I'm out of control
5. It's true that I can be mean to others
6. People who mess with me always regret it
7. I have never gotten into trouble with the law (R)
8. I enjoy having sex with people I hardly know
9. I'll say anything to get what I want

Sadism

1. Hurting people would be exciting.
2. I have hurt people because I could.
3. I wouldn't intentionally hurt anyone. (R)
4. I have hurt people for my own enjoyment.
5. I have humiliated others to keep them in line.
6. I would enjoy hurting someone physically, sexually or emotionally.
7. I enjoy seeing people hurt.
8. I have fantasies which involve hurting people.
9. Sometimes I get so angry I want to hurt people.
10. People would enjoy hurting others if they gave it a go.

Please indicate how much you agree with each of the following statements from -3 (totally disagree), 0 (neutral), to +3 (totally agree)

1. Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.
2. The majority of those who criticize proper authorities in government and religion only create useless doubts in people's mind.
3. The situation in our country is getting so serious, the strongest method would be justified if they eliminated the troublemakers and got us back to our true path.
4. What our country really needs instead of more "civil rights" is a good stiff dose of law and order.
5. Obedience and respect for authority are the most important values children should learn.
6. The fact crime, sexual immorality and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers, if we are going to save our moral standards and preserve law and order.
7. What our country needs most is disciplined citizens, following national leaders in unity.
8. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly. (R)
9. A lot of our rules regarding sexual behavior are just customs which are not necessarily any better or holier than those which other people follow. (R)
10. There is absolutely nothing wrong with nudist camps. (R)
11. Homosexuals and feminists should be praised for being brave enough to defy "traditional family values." (R)
12. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else. (R)
13. People should pay less attention to the Church and the Pope, and instead develop their own personal standards of what is moral and immoral. (R)
14. It is good that nowadays young people have greater freedom "to make their own rules" and to protest against things they don't like. (R)

Please rate your agreement to each item from 1 (strongly disagree) to 5 (strongly agree).

1. There are things I prefer not to think about.
2. Sometimes I wonder why I have the thoughts I do.
3. I have thoughts that I cannot stop.
4. There are images that come to mind that I cannot erase.
5. My thoughts frequently return to one idea.
6. I wish I could stop thinking about certain things.
7. Sometimes my mind races so fast I wish I could stop it.
8. I always try to put problems out of my mind.
9. There are thoughts that keep jumping into my head.
10. Sometimes I stay busy just to keep thoughts from intruding on my mind.
11. There are things that I try not to think about.
12. Sometimes I really wish I could stop thinking.
13. I often do things to distract myself from my thoughts.
14. I have thoughts that I try to avoid.
15. There are many thoughts that I have that I don't tell anyone.

Where would you place yourself on the political spectrum?
1 (completely liberal) to 6 (neither left nor right) to 11 (completely conservative)

How likely are you to follow your government's recommendations to wear a mask while in public where you can come into close contact with people, like the grocery store, pharmacy, to try to prevent the spread of COVID-19? 1 (not at all) to 10 (completely)

Thank-you

Thank you for participating in the present study on how different people interpret governmental policies or actions. The present study investigates how people with different personalities interpret these policies or actions and how these may correlate with current political and policy trends.

If you know of any friends or acquaintances who are eligible to participate in this study, we'd like to ask you that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the questions can invalidate the results. We greatly appreciate your cooperation.

If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

If the questions raised any issues for you, we recommend you contact your general practitioner as the first point of contact.

If you are living in Galway, here are some contacts who can assist you if any issues arose.

NUIG Student Counselling Services 091 492 484

NUIG Student Health Unit 091 492 604 M-F 9:15-12:30 and 2:30-4:30 Monday-

Thursday (**After 6pm**) contact emergency number: 087 262 3997 Saturday, Sunday & Bank Holidays (**8-6pm**)

Citydoc, Bons Secour Hospital 091 758008 Friday, Saturday & Sunday (**Evening 6pm-8am**)
Galway City GP Rota 087 774 4430

Here is a link to the HSE's services for non-NUI Galway

assistance: <https://www.hse.ie/eng/services/list/1/lho/galway/mental-health-services/>

The gift card draw will be done as soon as the study is closed. Please make sure that your information will be accurate for at least the next 2-3 months.

The information for the chance to win a gift card will have no link to your answers, and your answers remain anonymous and confidential.

Once you click next, you will be taken to a new page to enter your information if you would like to enter the draw. If you do not want to enter the draw, simply close out of the next page.

D. Study 4 Appendices

D.1 Study 4 Participant Exposure Materials

Information and Consent

This study was approved by the National University of Ireland Galway Research Ethics' Committee.

Purpose: The purpose of this study is to examine how different people interpret governmental policies or actions.

Principal Investigator: Christie Tetreault, NUI Galway School of Psychology. Email: c.tetreault1@nuigalway.ie

Supervising Investigator: Dr. Kiran Sarma, Senior Lecturer, NUI Galway School of Psychology. Email: kiran.sarma@nuigalway.ie

Study Procedures: You will be asked to give some demographic information, read four short real governmental policies and answer a few questions on them, and then report your attitudes on personality measurements. All of this will be conducted in an online format through a series of questionnaires. Some example questions are: "It's not wise to tell your secrets;" "I would enjoy hurting someone physically, sexually or emotionally.;" "Payback needs to be quick and nasty."

Time required: approximately 20-40 minutes

Anonymity/Confidentiality: All responses are anonymous and confidential. No documents will be created that link you to your answers. The information you provide for a chance to win a gift card will be separate from your answers. In addition, as with all research at NUI Galway, this project will be bound to comply with the European Union's established requirements in relation to data confidentiality and security under General Data Protection Regulation (GDPR). All electronic data will be held on government-grade encrypted IT equipment.

Remuneration/Compensation: If you agree to participate, you can choose to receive a chance to win 1 of 3 gift cards of €50 (or equivalent value in your local currency).

Contact for information about the study: If you have any questions or desire further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

Consent: Your participation in this study is entirely voluntary, and you may refuse to participate or withdraw from the study at any time by closing out of the survey and then your data will not be analyzed. If you have any issues with the website freezing or crashing due to heavy traffic, you can refresh or enter into the survey again (within 30 minutes), and it should take you to the

place you were last at. Please email c.tetreault1@nuigalway.ie if you experience any difficulties.

By continuing with the online questionnaire, you are consenting that you have read the above information, are agreeing to participate in the study, and are above the age of 18.

Demographic Information

Please answer the following questions.

1. How do you identify.... Male Female Nonbinary Prefer not to say
2. How old are you (in years)? _____
3. What is your highest level of completed education? Some high school, high school, undergraduate degree, Master's degree, PhD
4. To which of the following do you consider yourself to belong? White, Irish Traveller, Black, Asian, Other (including mixed background)
5. How often do you use social media (e.g., Twitter, Facebook, Instagram, etc.)? Daily; several times per week; 2-3 times per week; once per week; less than once per week but still use social media; never, I don't use social media
6. What country do you live in currently?
7. What country did you live in growing up?

The four SSE vignettes and subquestions that were in the main manuscript in Study 3 were included here.

On a scale from 0 (not at all) to 10 (completely), please indicate to what extent you agree with each of the following statements.

(Please note you may have to scroll to the right to see all of the options depending on the device you are on).

1. I think that many very important things happen in the world, which the public is never informed about.
2. I think that politicians usually do not tell us the true motives for their decisions.
3. I think that government agencies closely monitor all citizens.
4. I think that events which superficially seem to lack a connection are often the result of secret activities.
5. I think that there are secret organizations that greatly influence political decisions.

Instructions: Please indicate how much you agree with each of the following statements 1 (disagree strongly) to 5 (agree strongly)

Machiavellianism

1. It's not wise to tell your secrets
2. I like to use clever manipulation to get my way
3. Whatever it takes, you must get the important people on your side
4. Avoid direct conflict with others because they may be useful in the future
5. It's wise to keep track of information that you can use against people later
6. You should wait for the right time to get back at people
7. There are things you should hide from other people to preserve your reputation
8. Make sure your plans benefit yourself, not others
9. Most people can be manipulated

Narcissism

1. People see me as a natural leader
2. I hate being the centre of attention (R)
3. Many group activities tend to be dull without me
4. I know that I am special because everyone keeps telling me so
5. I like to get acquainted with important people
6. I feel embarrassed if someone compliments me (R)
7. I have been compared to famous people
8. I am an average person (R)
9. I insist on getting the respect I deserve

Psychopathy

1. I like to get revenge on authorities
2. I avoid dangerous situations (R)
3. Payback needs to be quick and nasty
4. People often say I'm out of control
5. It's true that I can be mean to others
6. People who mess with me always regret it
7. I have never gotten into trouble with the law (R)
8. I enjoy having sex with people I hardly know
9. I'll say anything to get what I want

Sadism

1. Hurting people would be exciting.
2. I have hurt people because I could.
3. I wouldn't intentionally hurt anyone. (R)
4. I have hurt people for my own enjoyment.
5. I have humiliated others to keep them in line.
6. I would enjoy hurting someone physically, sexually or emotionally.
7. I enjoy seeing people hurt.
8. I have fantasies which involve hurting people.
9. Sometimes I get so angry I want to hurt people.
10. People would enjoy hurting others if they gave it a go.

Please indicate how much you agree with each of the following statements from -3 (totally disagree), 0 (neutral), to +3 (totally agree)

1. Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.
2. The majority of those who criticize proper authorities in government and religion only create useless doubts in people's mind.
3. The situation in our country is getting so serious, the strongest method would be justified if they eliminated the troublemakers and got us back to our true path.
4. What our country really needs instead of more "civil rights" is a good stiff dose of law and order.
5. Obedience and respect for authority are the most important values children should learn.
6. The fact crime, sexual immorality and the recent public disorders all show we have to crack down harder on deviant groups and troublemakers, if we are going to save our moral standards and preserve law and order.
7. What our country needs most is disciplined citizens, following national leaders in unity.
8. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly. (R)
9. A lot of our rules regarding sexual behavior are just customs which are not necessarily any better or holier than those which other people follow. (R)
10. There is absolutely nothing wrong with nudist camps. (R)
11. Homosexuals and feminists should be praised for being brave enough to defy "traditional family values." (R)
12. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else. (R)
13. People should pay less attention to the Church and the Pope, and instead develop their own personal standards of what is moral and immoral. (R)
14. It is good that nowadays young people have greater freedom "to make their own rules" and to protest against things they don't like. (R)

Please think about **the country you identify with most as "my group"** when you respond to the statements below.

Please indicate to what extent you agree or disagree with these statements using the following scale: 1 (strongly disagree) to 7 (strongly agree).

1. I wish other groups would more quickly recognize the authority of my group
2. My group deserves special treatment.
3. I will never be satisfied until my group gets all it deserves.
4. I insist upon my group getting the respect that is due to it.
5. It really makes me angry when others criticize my group.
6. If my group had a major say in the world, the world would be a much better place.
7. I do not get upset when people do not notice achievements of my group.
8. Not many people seem to fully understand the importance of my group.
9. The true worth of my group is often misunderstood.

Please rate your agreement to each item from 1 (strongly disagree) to 5 (strongly agree).

1. There are things I prefer not to think about.
2. Sometimes I wonder why I have the thoughts I do.
3. I have thoughts that I cannot stop.
4. There are images that come to mind that I cannot erase.
5. My thoughts frequently return to one idea.
6. I wish I could stop thinking about certain things.
7. Sometimes my mind races so fast I wish I could stop it.
8. I always try to put problems out of my mind.
9. There are thoughts that keep jumping into my head.
10. Sometimes I stay busy just to keep thoughts from intruding on my mind.
11. There are things that I try not to think about.
12. Sometimes I really wish I could stop thinking.
13. I often do things to distract myself from my thoughts.
14. I have thoughts that I try to avoid.
15. There are many thoughts that I have that I don't tell anyone.

Please rate your level of agreement to each from 1 (not at all true of me) to 7 (very true of me). There are no right or wrong answers, so try to be as honest and accurate as possible.

There are no right or wrong answers, so try to be as honest and accurate as possible.

1. I often find myself questioning things I hear or read in this class to decide if I find them convincing.
2. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.
3. I treat the course material as a starting point and try to develop my own ideas about it.
4. I try to play around with ideas of my own related to what I am learning in this course.
5. Whenever I read or hear an assertion or conclusion in this class, I thought about possible alternatives.

Please consider each of the statements below and indicate your level of agreement or disagreement with each on a scale from 1 (strongly disagree) to 7 (strongly agree).

There are no right or wrong answers, so try to be as honest and accurate as possible.

1. I find that I'm easily distracted when thinking about a task. (R)
2. I find it hard to concentrate when thinking about problems. (R)
3. I often miss out on important information because I'm thinking of other things. (R)
4. I often daydream when learning a new topic. (R)
5. Thinking is not about 'being flexible', it's about 'being right'. (R)
6. Being open-minded about different worldviews is less important than people think. (R)
7. When attempting to solve complex problems, it's better to give up fast, if you cannot reach a solution so as to not waste time. (R)
8. I know what I think and believe so it's not important to dwell on it any further. (R)
9. I persevere with a task even when it is very difficult.
10. Frustration does not stop me from finishing what needs to be done.
11. I find it desirable to keep going even if it is sometimes hard.
12. I enjoy information that challenges me to think.
13. I look forward to learning challenging things.
14. Completing difficult tasks is fun for me.
15. Even if material is difficult to comprehend, I enjoy dealing with information that arouses my curiosity.

Please rate the strength of your agreement or disagreement with each of the following items on a 4-point scale (1 - very uncharacteristic of me to 4 - very characteristic of me) in regards to yourself.

There are no right or wrong answers, so try to be as honest and accurate as possible.

1. I wish I were more consistent in my feelings.
2. It's hard for me to figure out my own personality, interests, and opinions.
3. I often think how fragile my existence is.
4. I have a pretty good sense of what my long-term goals are in life. (R)
5. I sometimes wonder if people can actually see me.
6. Other people's thoughts and feelings seem to carry greater weight than my own.
7. I have a clear and definite sense of who I am and what I'm all about. (R)
8. It bothers me that my personality doesn't seem to be well-defined.
9. I'm not sure that I can understand or put much trust in my thoughts and feelings.
10. Who am I? is a question that I ask myself a lot.
11. I need other people to help me understand what I think or how I feel.
12. I tend to be very sure of myself and stick to my own preferences even when the group I am with expresses different preferences. (R)

Where would you place yourself on the political spectrum?
1 (completely liberal) to 6 (neither left nor right) to 11 (completely conservative)

In the space below, can you please write the word "FOUR" backwards? Our previous survey was hacked by bots, so this question is to be able to detect them.

Thank-you

Thank you for participating in the present study on how different people interpret governmental policies or actions. The present study investigates how people with different personalities interpret these policies or actions and how these may correlate with current political and policy trends.

If you know of any friends or acquaintances who are eligible to participate in this study, we'd like to ask you that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the questions can invalidate the results. We greatly appreciate your cooperation.

If you have any questions or need further information with respect to the study, you may contact the Principal Investigator, Christie Tetreault, at c.tetreault1@nuigalway.ie or the Supervising Investigator, Dr. Kiran Sarma, at kiran.sarma@nuigalway.ie

If the questions raised any issues for you, we recommend you contact your general practitioner as the first point of contact.

If you are living in Galway, here are some contacts who can assist you if any issues arose.

NUIG Student Counselling Services 091 492 484

NUIG Student Health Unit 091 492 604 M-F 9:15-12:30 and 2:30-4:30 Monday-Thursday (**After 6pm**) contact emergency number: 087 262 3997 Saturday, Sunday & Bank Holidays (**8-6pm**)

Citydoc, Bons Secour Hospital 091 758008 Friday, Saturday & Sunday (**Evening 6pm-8am**)
Galway City GP Rota 087 774 4430

Here is a link to the HSE's services for non-NUI Galway

assistance: <https://www.hse.ie/eng/services/list/1/lho/galway/mental-health-services/>

The gift card draw will be done as soon as the study is closed. Please make sure that your information will be accurate for at least the next 2-3 months.

The information for the chance to win a gift card will have no link to your answers, and your answers remain anonymous and confidential.

Once you click next, you will be taken to a new page to enter your information if you would like to enter the draw. If you do not want to enter the draw, simply close out of the next page.