Testing the Influence of Self-Generated Persuasion on Conspiratorial Thinking among New Zealand Adults

Sina Mon

A thesis submitted to
Auckland University of Technology
in partial fulfilment of the requirements for the degree of
Master of Arts Psychology

2022

School of Social Sciences and Public Policy

Abstract

Conspiracy theories are persuasive and influential. Given the risks associated with belief in unwarranted conspiracy theories, research has started to examine various interventions to prevent or correct conspiracy adherence. This research study extends previous literature focused on attenuating conspiracy adherence by testing a novel intervention tool of self-persuasion to attenuate conspiracy mentality. More specifically, this research examined if self-persuasion via an argument-generation task would effectively influence general conspiracy mentality and conspiratorial suspicions about COVID-19.

In a mixed study design, 452 participants from New Zealand were recruited online via convenience sampling and randomly assigned into one of four experimental conditions. Participants were asked to generate arguments that were: pro-conspiracy, anti-conspiracy, pro-greenery, or anti-greenery.

Contrary to all hypotheses, findings showed that engagement in a self-persuasion task did not effectively influence conspiracy mentality or conspiratorial suspicion about COVID-19. Interestingly, conspiracy mentality scores across all conditions significantly decreased after a delayed period. Additionally, after generating pro-conspiracy arguments, significantly more participants chose not to receive information about COVID-19 conspiracies. Furthermore, after controlling for participants' intolerance of uncertainty or topic importance, there were no significant differences in conspiracy mentality scores or COVID-19 conspiracy suspicion scores across the experimental conditions.

Despite the prior success of self-persuasion interventions, the present study findings do not support self-persuasion for attenuating conspiracy adherence. Possible explanations and study limitations are considered. The methodological and theoretical suggestions for future research to attenuate conspiracy thinking are discussed.

Table of Contents

List of Figures

List of Tables

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning

………………….

Sina Mon

Acknowledgements

I would like to express my utmost appreciation and thanks to my primary supervisor Dr Jay Wood. Your expertise and unwavering support has been invaluable to completing this thesis.

An extended thank you to my secondary supervisor, Dr Erik Landhuis. I am so grateful for your input and suggestions in refining this research study.

My sincere thank you to all the lecturers who kindly shared the research flyer with their students and to the many other AUT staff who have advised and supported me in one way or another throughout my research journey.

A special thank you to all my research participants for giving up their time to complete the surveys, especially those who took it upon themselves to share the digital flyer.

To my small circle of postgrad friends who were never short of good advice and to my younger sisters who kept me motivated. Thank you for having my back.

A final thank you to Daniel Marr. I truly cannot thank you enough for over half a decade of endless encouragement.

Ethics Approval

This research study was granted ethics approval from Auckland University of Technology Ethics Committee (AUTEC) on 16 September 2020 under the title 'Testing the influence of self-generated persuasion on conspiratorial thinking among New Zealand adults' (reference # 20/274, see Appendix A).

Abbreviations and Acronyms

ANOVA	Analysis of Variance
ANCOVA	Analysis of Covariance
AUT	Auckland University of Technology
AUTEC	Auckland University of Technology Ethics Committee
CMQ	Conspiracy Mentality Questionnaire
CT	Conspiracy theory
FA	Factor Analysis
FICS	Flexible Inventory of Conspiracy Suspicion Scale
IUS	Intolerance of Uncertainty Scale
F	F Statistic
M	Mean
N or n	number of participants in sample
p	probability value
SD	Standard deviation
t	t-value
r	Pearson's correlation coefficient
χ^2	Chi-square
α	Cronbach's alpha
κ	Kappa
η_p^2	Partial Eta Squared

Testing the Influence of Self-Generated Persuasion on Conspiratorial Thinking among New Zealand Adults

Conspiracy theories are persuasive and influential. In New Zealand, shortly after the country exited a nationwide lockdown in 2020 due to the COVID-19 outbreak, telecommunication towers across the country were destroyed in arson attacks (Kronast, 2020). The attack on cell towers in New Zealand was suspected to be fuelled by conspiracy rumours connecting the Coronavirus pandemic with the 5G network (Daalder, 2020). The destruction of 5G equipment and a 4G tower was not isolated to New Zealand. Similar attacks in the United States and Europe have also been reported (Ankel, 2020; Cerulus, 2020; Chan et al., 2020; Hamilton, 2020).

Indeed, many 5G Coronavirus conspiracies are circulating on the internet. One conspiracy rumour claims that 5G weakens our immune systems, therefore, increasing our vulnerability to COVID-19. Another conspiracy rumour claims 5G directly transmits the virus, while another claims the virus was intentionally spread to keep us at home while 5G was being installed (Bartholomew, 2020). An increasingly popular conspiracy theory claims the COVID-19 pandemic was a deliberate plan by societal elites and agents, such as Bill Gates and Big Pharma, in order for us to get vaccinated with tracking chips activated by 5G (Tuters & Knight, 2020). The latter conspiracy theory likely stems from a viral conspiracy video titled "Plandemic" (Nazar & Pieters, 2021). In this documentary-style video, a discredited researcher promotes the pandemic is part of a large-scale conspiracy involving elite conspirators who profit from vaccine sales and seek population control (Nazar & Pieters, 2021; Tuters & Knight, 2020).

What is more, such conspiracy theories are not going unnoticed. A survey by the Pew Research Centre found that 71% of Americans had heard 'a little bit' about the planned pandemic conspiracy theory, and 19 % of Americans said they had heard 'a lot' about this conspiracy theory. In addition, 36% of those Americans who had heard of the conspiracy theory agreed it to be 'definitely' or 'probably' true (Mitchell et al., 2020).

Before diving into an overview of the history, spread, and persistence of conspiracy theories in the following sections, it is first necessary to define some key terms used in the scholarly conspiratorial literature.

Literature Review

Definition of Key Terms

There is a range of nuances in the key terms used within the conspiratorial literature, with some terms used interchangeably. The terms will be clarified below and used as defined here throughout the thesis.

A *conspiracy* refers to a real event that involves influential people who conspire together in secrecy to accomplish a specific goal. A conspiracy aims to result in large-scale

political or economic power, to withhold important secrets, to change institutions or violate rights (Douglas et al., 2019). When authorities describe an event as a conspiracy, this would be suggesting that it is true (Uscinski, 2018). There is no denying that people can conspire and conspiracies can occur, such as the Watergate scandal conspiracy theory (Douglas & Sutton, 2018; van Proojen et al., 2018).

A *conspiracy theory* (CT) is defined as a proposed explanation or malevolent plot for an event involving powerful agents or people who work together in secrecy to attain their goal (Wood et al., 2012). A conspiracy theory is, by definition, not necessarily a false theory because it may or may not be true. The primary claim of a conspiracy theory is that important events were caused by conspiracies that have remained undiscovered (Coady, 2006). Therefore, a conspiracy theory is generally accusatory and can contradict the official explanation (Uscinski, 2018). The term 'conspiracy theory' tends to have negative connotations as the term itself is dismissive and pejorative (Douglas & Sutton, 2008). The modern label of conspiracy theory is generally derogatory as several conspiracy theories existing today are nonsensical. An example of a conspiracy theory would be that contact with aliens has been made, but the government purposely keeps this secret. Another example is the conspiracy theory in which pharmaceutical companies and governments are conspirators encouraging harmful vaccines (Stojanov, 2015).

A *conspiracy belief* refers to an individual's belief in a specific conspiracy theory or belief in a set of conspiracy theories (Douglas et al., 2019; Uscinski, 2018). To distinguish a conspiracy belief from other forms of beliefs such as superstitious or paranormal beliefs, a facet of conspiracy beliefs is the inclusion of a group or coalition of powerful people wanting to attain a usually sinister goal (van Prooijen & Douglas, 2017).

A *conspiracy theorist* refers to an individual, who concocts, theorises, and spreads conspiracy theories while engaging in conspiracy thinking (Douglas et al., 2019; Uscinski, 2018). Some may view conspiracy theorists as the sceptics of common wisdom, whereas others may view conspiracy theorists as credulous and paranoid individuals (Keeley, 2019). In most cases, the term conspiracy theorist is used to demarcate those who take on an active role in sharing a conspiracy theory as paranoid loners seeing a fire at the sight of smoke (Harambam, 2020; Uscinski, 2018). However, it has been suggested that we are all, to some extent, conspiracy theorists (Douglas & Sutton, 2018).

In a similar vein, *conspiracy theorising* refers to the concoction and endorsement of a conspiracy theory (Landrum & Olshanksky, 2019). Conspiracy theorising can occur when a perceived conflict of interest prompts a conspiracy theorist to gather evidence that generally challenges or exposes something unknown to others about the accepted explanation (Keeley, 2019).

A term at the crux of this thesis is *conspiracy mentality* (used interchangeably with *conspiracy ideation*) which refers to a general tendency or predisposition to subscribe to conspiracy theories that blame ill-intending individuals or groups for important societal events

(Bruder et al., 2013). In other words, conspiracy mentality or conspiracy ideation reflects a generalised belief in conspiracy theories and appears to be a stable individual trait (Imhoff & Bruder, 2014).

In line with having a conspiracy mentality is a *conspiratorial worldview*. A conspiratorial worldview is a self-sustaining belief system. Individuals who have a conspiratorial worldview would view conspiracies as more likely. Consequently, conspiratorial explanations for large-scale events are easily assimilated and accepted by individuals who distrust recognised authority bodies (Wood et al., 2012). In other words, an overarching conspiratorial worldview reflects a higher-order belief system within the individual. The higher-order belief may be that authority bodies are indeed deceptive. This higher-order belief system would allow other conspiracy theories, regardless of content, to be readily accepted because the theories support the idea of a conspiracy occurring (Wood et al., 2012).

Conspiratorial, conspiracist or conspiracy thinking is similar to conspiracy mentality. The term reflects a cognitive style or the underlying worldview to view events as a product of conspiracy (Uscinski, 2018). Conspiracy thinking is related to conspiracy mentality as both reflect the tendency to create connections between events and situations (van der Wal et al., 2018). Those who think of events and things in conspiratorial terms are more likely to believe in a conspiracy theory (Uscinski, 2018). From this explanation, a conspiracy theorist would be someone who engages in conspiratorial thinking.

Background of Conspiracy Thinking

A common assumption seems to be that we live in an 'age of conspiracism' and 'conspiracy culture'. It is understandable why people would assume this, considering there seems to be no significant event today, whether a plane crash, death of a public figure, or an election result that has not resulted in conspiracy speculation (Byford, 2011; van Prooijen & Douglas, 2017). However, when we consider events such as natural disasters, recessions, wars, or revolutions that inspired conspiracy theorising, it suggests that conspiracy theorising has always been prevalent in society, especially in times of crisis events (van Prooijen & Douglas, 2017). For instance, consider how this current pandemic, a global crisis, has generated many Coronavirus conspiracy theories.

A brief internet search can quickly reveal the wealth of Coronavirus conspiracy theories that exist. While the internet is a host for conspiracies to thrive, as previously mentioned, the notion of conspiracism and conspiracy theories itself is not a new phenomenon. In some cases, what some think are new conspiracy theories can instead be mutated versions of prior conspiracy theories (Byford, 2011).

Conspiracism and conspiracy theorising has occurred for centuries, albeit some view conspiracy theories as foolish, illogical, and irrational. Conspiracy theories have long been prevalent in societies as a central feature of political and societal discourse (Bost et al., 2010). It

is not uncommon for conspiracy rumours to be used in political propaganda to intimidate and manipulate public opinion (Goertzel, 2010; Lukić et al., 2019). Conspiracy theories are quicker to promulgate than they are to refute or dispel. Conspiracy theories are difficult to dispel or refute because they are generally not falsifiable. A contributing reason for this is that information or disconfirming evidence against the conspiracy theory can be absorbed into a broader 'mega-conspiracy theory' (Sutton & Douglas, 2014).

In the last two decades, psychological research on conspiracy theory beliefs has had notable growth, especially as multiple events became the topic of conspiracy theorising at the beginning of the 21st century. For example, in the United Kingdom, after the death of Princess Diana, a string of conspiracy theories proposing emphatically different plots emerged (Uscinski, 2018). While one conspiracy theory proposed MI6 or other enemies assassinated Princess Diana, another claimed she faked her death (Wood et al., 2012). More recently, in the United States of America, the election of Barack Obama prompted conspiracy theories about the legitimacy of his birthplace (Uscinski, 2018).

While popularised conspiracy narratives tend to spring predominantly from the United States or the United Kingdom (Uscinski, 2018), conspiracy beliefs exist across different cultures and populations. Indeed, much of extant literature has investigated conspiracy beliefs predominantly within western populations (Swami et al., 2011; van Proojen & Acker, 2015). However, belief in conspiracy theories is also common in non-western populations such as Malaysia (Swami, 2012), Indonesia (Mashuri & Zaduqisti, 2015), South Africa (Grebe & Nattrass, 2012) and in rural parts of African countries (West & Sanders, 2003). It is evident that conspiratorial suspicions exist across the globe, which leads us to the next point of discussion about the spread and persistence of conspiracy theories.

Spread and Persistence of Conspiracy Theories

With conspiracy theories being prevalent among different populations and varying in content, it is reasonable to question how they are spread and why they persist. It is plausible that increased exposure to conspiracy theories via the internet has made them more accessible and appear more common (Byford, 2011). Information dissemination in the digital age allows conspiracy theory information to be easily accessible. More specifically, the increase in internet usage and social media users worldwide creates an opportunity for misinformation, disinformation, and conspiracy theories to spread and influence the public. It is not uncommon for public events to be followed by online debates and discussions about its 'true nature' (Gebauer et al., 2016). People may spend time looking for information through unreliable sources such as forums, blogs, and comments sections that perpetuate "fake news" (Salvador Casara et al., 2019). As a result, the internet can be a prime host for confirmation bias and motivated reasoning (Miller et al., 2016). Individuals can readily seek out conspiratorially

consistent information which further solidify their beliefs rather than seek out opposing information (Miller et al., 2016).

Aside from the internet, other media also contribute to increased exposure and spread of conspiracy information. Even when information is presented as multi-sided to dissuade individuals from conspiracy adherence, this gives the impression that there is a real divide or conflict about an issue when there should not be. For example, the autism-vaccine link arguments have been presented as a fight between the pro-science and anti-vaxxers. This exposure to arguments presented in a balanced fashion alludes to a phenomenon called the *false balance bias*. The false balance bias reflects journalistic practice wherein every perspective, for fairness sake, is presented, thus giving the impression that subjective opinions and case stories are comparable to scientific evidence (Salvador Casara et al., 2019).

Labelling something as a conspiracy theory does little to discourage conspiracy adherence (Wood, 2016). The persistence of conspiracy theories results in an abundance of historical and contemporary conspiracy theories. Within the range of conspiracy theories, some appear more plausible than others. For example, a faked moon landing conspiracy is more plausible than a reptilian conspiracy theory.

The persistence of conspiracy adherence can be attributed to how individuals perceive conspiracy information. For example, empirical evidence has shown that most people think persuasive media influences other people more strongly than it would influence themselves, referring to the *third-person effect* (Douglas & Sutton, 2008). This is to say that individuals underestimate the level of influence that conspiracy theories have on their attitudes (Douglas & Sutton, 2008). Conspiracy theories persist despite digital media offering individuals multi-sided information to debunk the conspiracy theories, but not all individuals will do so (Warner & Neville-Shepard, 2014). It can be confusing to discern which information to endorse, especially considering there are also internet trolls who can build Facebook pages that are caricatured versions of conspiracy news sources (Bessi et al., 2015).

Another process that encourages the persistence of conspiracy theories is how individuals selectively consume media that is consistent with their pre-existing beliefs and attitudes (Bennett & Iyengar, 2008). Individuals tend to place themselves into attitude-consistent silos, so ideas with even little basis can be adopted and spread, unchecked (Miller et al., 2016). To illustrate this point, consider an online Facebook interaction study by Bessi et al. (2015). Bessi et al. found that online conspiracy news, in comparison to online science news, received more likes and shares among Facebook users who were predominantly conspiracy news endorsers. This finding shows how conspiracy believers displayed a greater preference towards attitude-consistent information (the conspiracy news) and displayed lower trust in other sources of information (the science news). This is dangerous considering that any individual can theorise about an event, publish this theory on the internet, and see if it persists (Miller et al., 2016).

Why Individuals Adhere to Conspiratorial Information

In order to provide further insight into the persistence of conspiratorial explanations, the following paragraphs will discuss why individuals adhere to conspiracy information from a broader perspective and a psychological perspective.

Within scholarly literature, many disciplines have examined why conspiracy theories are appealing and what factors lead to conspiracy theory adherence. One line of thinking proposes that conspiratorial information is preferred because there is a gap between what scientists have shown and what the public believes. The gap refers to the *information deficit model* of science communication. This model states members of the public lack science knowledge and this drives science denialism (Landrum & Olshanksky, 2019). The information deficit model may provide answers when considering the flat earth, anti-vaccination, and climate change conspiracy theories tend to stem from doubt and denial of scientific evidence (Douglas et al., 2019; Goreis & Voracek, 2019; Jolley & Douglas, 2017; Lewandowsky et al., 2013). However, the information deficit model may be overly simplified when considering instances such as anti-vaccination conspiracy beliefs that persist despite the medical establishment's best efforts in educating the public of the benefits of vaccines (Goldberg & Richey, 2020). Another reason conspiracy information may be preferred is due to a perceived lack of consensus among scientists. The perceived lack of scientific consensus can encourage acceptance of an alternative conspiratorial explanation (Lewandowsky et al., 2013).

Psychological research on conspiracy adherence has shown conspiracy theories are associated with a large variety of individual traits. Believing in conspiracy theories is associated with psychopathological issues such as paranoid schizophrenia (Barron et al., 2014; Darwin et al., 2011). Paranoid ideation and schizotypy are strongly associated with belief in conspiracy theories (Darwin et al., 2011; van der Tempel & Alcock, 2015) as clinically paranoid individuals show greater fear, distrust, and paranoia for their environment (Melley, 2002).

Beyond the psychopathological lens, growing interest from social psychologists also research conspiracy beliefs within the non-clinical sample. Empirical evidence shows that people who think the world is a dangerous place are more likely to have conspiracy beliefs (Moulding et al., 2016). It has been observed that psychological variables such as a need for uniqueness can be fulfilled by conspiracy beliefs (Imhoff & Lamberty, 2017).

Conspiracy theories or conspiracy beliefs may serve individuals who feel less powerful to feel in possession of secret information (Mason, 2002). Whitson and Galinsky (2008) experimentally found those who were made to feel powerless were more inclined to see patterns in stimuli and more likely to endorse conspiracy theories. The pattern perception and endorsement of conspiracy theories were attributed to an underlying need to restore control and find order in an otherwise random environment. Similarly, van Proojen and van Vugt (2018) also found pattern perception correlated to conspiracy beliefs. Contrary to these studies, Dieguez et al. (2015) found no association between randomness and conspiracy ideation.

A clear facet of conspiracy theories is the focus of power and explicitly accusing those in power of conspiring (Uscinksi, 2018). This is in accordance with research findings in which marginalised or non-powerful groups are much less accused of conspiring and are the victims of conspiracy theories (Uscinski, 2018). For example, Parsons et al. (1999) examined the prevalence of conspiracy theories among African Americans and found strong conspiracy theory beliefs about the government. Conspiracy beliefs may be more prevalent among disadvantaged groups because there is a greater desire to explain events beyond their control (Crocker et al., 1999; Goertzel, 1994). This is further supported by research which found those from a minority ethnicity are more likely to endorse conspiracy theories, as it serves in ameliorating feelings of powerlessness and fills the need for certainty and control (Simmons & Parsons, 2005; Swami, 2012).

Motives for Conspiracy Theory Adherence

Another line of thinking has categorised why people may be motivated to adhere to conspiracy theories. Douglas et al. (2017) claims that conspiracy theories appeal to individuals' social-psychological motives. The motives are characterised as epistemic, existential, or social. Epistemic motives refer to seeking internally consistent or meaningful explanations, especially when the explanation is incomplete or unavailable. Individuals want to understand and make better sense of their environment. This includes finding meaning in random events and defending beliefs from disconfirming evidence. In this way, the causal explanation of a conspiracy theory may serve in satisfying one's epistemic motives by offering accuracy and helping to preserve beliefs (Douglas et al., 2019). The epistemic motive claims that individuals seek a coherent and connected thread between complicated or random events. This may leave room for adopting conspiratorial explanations regardless of how far-fetched the explanation may be (Miller et al., 2016).

Existential motives refer to a need for autonomy over oneself and feeling safe and secure in one's environment. This is evident in Newwheiser et al. (2011) wherein conspiracy theories appeal to those wanting to alleviate existential threats. Conspiracy theories afford the believer the option to reject the official narrative, which may make conspiracy theories more appealing to those who feel a lack of agency and personal control (Douglas et al., 2019). In support of the existential motive, Whitson and Galinsky (2008) found that those experimentally made to feel high feelings of powerlessness and disillusion were more likely to see patterns and therefore, more likely to adhere to conspiracy beliefs.

Social motives reflect a need to belong and to maintain a positive image. The social motive can function at the individual and group level. People may valorise the self and their in-group by blaming out-groups for negative outcomes, such as blaming groups perceived to be powerful. This maintains a positive image for oneself and the in-group (Douglas et al., 2017). Under the social motive, there is a strong protection for the in-group (Douglas et al., 2019). The out-group (who are perceived as powerful and immoral) are viewed as sabotaging the in-group.

8

It is suggested that people who have been racially discriminated against are also more likely to believe in conspiracy theories about their in-group because in this way, the in-group are protected. The in-group members are not the wrong-doers, and a positive image can still be maintained (Simmons & Parsons, 2005). Further evidence by Imhoff and Bruder (2014) also show that a conspiracy mentality is linked to prejudice against powerful groups because powerful groups are perceived negatively compared to less powerful groups.

Conspiracy Mentality and Monological Worldview

Considering conspiracy theories can be construed around almost any societal event (Lukić et al., 2019), it is plausible to assume that different conspiracy theories would appeal to different audiences. However, those who believe in conspiracy theories share an underlying mindset or thinking pattern. Believing in conspiracy theories can reflect a type of cognitive style or conspiracist belief system because there is an interconnectedness of conspiracy beliefs (Goldberg & Richey, 2020; Wood et al., 2012). In Goertzel's (1994) view, conspiracy theories form what he termed a *monological belief system*. A monological belief system is supported by a conspiracist worldview which makes new conspiratorial information more easily assimilated. In other words, if incoming conspiratorial information is in line with one's worldview, a worldview in which conspiracies are very plausible and ubiquitous, then acceptance of the new conspiratorial information is more likely (Goertzel, 1994). This belief system motivates individuals to protect their worldview by dismissing the opposing alternative information (Gebauer et al., 2016). Having a conspiracy mentality makes believing other conspiracy theories more likely. As evidenced in Goertzel's (1994) research, a conspiracy theory believer, who believed that the American government was responsible for the 9/11 attacks was also more likely to believe that Princess Diana's death was a deliberate assassination. Subsequent research has further demonstrated support for this pattern of conspiracy mentality.

For example, those who believed in a real-world conspiracy theory such as the John F. Kennedy assassination, were also more likely to believe in a fictitious Red Bull conspiracy theory made up by the researchers (Swami et al., 2011). Furthermore, in an influential study, Wood et al. (2012) found individuals can believe in two mutually contradicting conspiracy theories about the same topic. For example, participants who believed the conspiracy theory that Princess Diana faked her death were also more likely to believe the contradicting conspiracy theory that Princess Diana was murdered. The finding that one can believe in two mutually exclusive conspiracy theories about the same topic was explained as conspiracy theories sharing a higher-order belief that the official narratives are false. Overall, these findings demonstrate that a higher-order belief system is an underlying feature of the conspiracy mentality (Bruder et al., 2013).

Conspiracy Thinking Helpfulness and Harmfulness

Now that the variables which may make someone more or less prone to believing conspiracy narratives have been discussed, an overarching concern to address is whether it

matters if people believe in conspiracy theories at all. The answer is yes when considering the harmful consequences, but the answer is also no when considering how conspiracy theories are helpful. The arguments that elaborate on conspiracy theories' harmfulness and helpfulness will be discussed below.

Harmfulness of Conspiracy Thinking

Undoubtedly, conspiracy theories and beliefs are a consequential social phenomenon (Douglas & Sutton, 2018). Whether conspiracy theories and the belief in them influence us more than amuses us is an important question that needs to be considered before dismissing the conspiracy theory entirely. Not all conspiracy theories and beliefs are innocuous. Understanding conspiracy beliefs and conspiratorial thinking is a matter of urgency when considering the adverse implications that believing can cause. Conspiracy beliefs have societal and behavioural repercussions which can be detrimental and, in some cases, fatal. For example, consider the recent case of a prominent conspiracy theorist who believed COVID-19 is a hoax. The conspiracy theorist has now passed away after hosting illegal gatherings and then contracting COVID-19 (Ellis, 2021).

As demonstrated by the many conspiracy theories about major world events, conspiracy theories have a strong ability to change the individuals' understanding of real-world historical or contemporary events (Dagnall et al., 2015). For instance, Banas and Miller (2013) found that participants who viewed a 9/11 Truth conspiracy video increased their 9/11 conspiracy theory endorsement by an average of 21.4%.

There are certainly situations that would benefit from understanding how to best correct or prevent conspiratorial beliefs. For example, there is a conspiracy theory proposing the evidence between childhood vaccinations and autism is being suppressed by the medical industry. This has negative consequences on population health as individuals may decide not to receive government recommended vaccinations (Goertzel, 2010). In a cross-national study comprised of 24 countries found that participants who scored high in conspiratorial thinking had high anti-vaccination attitudes (Hornsey et al., 2018). This is also supported by prior qualitative research which found that parents who opposed vaccination frequently cited distrust in the medical community and a belief in the vaccine-autism conspiracy theory (Mills et al., 2005). This is alarming as the result of refusing vaccination uptake can then lead to a resurgence in diseases. Furthermore, results from a survey within the United States found that those who believed in 3 or more medical conspiracy theories were less likely to use sunscreen, get an influenza shot or have annual check-ups (Oliver & Wood, 2014).

The influence of conspiracy exposure has been empirically shown by Jolley and Douglas (2014a). Those who believed in a conspiracy theory about vaccines being harmful were less likely to vaccinate their children. In addition to this, those who were made to believe in a conspiracy theory about global warming were also less willing to reduce their carbon footprint (Jolley & Douglas, 2014b). In this way, conspiratorial thinking can influence an individual's

pro-social behaviours or willingness to engage in important societal causes. Similarly, Van der Linden (2015) found that direct exposure to conspiratorial information about global warming significantly decreased participants' pro-environmental decisions and reduced participants confidence in the scientific consensus on climate change.

On a related note, the harm in unwarranted conspiracy theories is that they have the power to disrupt policy discussion about public health and shift attention from more pressing concerns (Miller et al., 2016). For example, in New Zealand, the Prime Minister spoke out on the false conspiracies regarding the 5G and COVID-19 link after conspiracy theories started circulating within the public during a nationwide lockdown (Molyneux, 2020).

Helpfulness of Conspiracy Thinking

There are other lines of thinking that view conspiracy theories as insignificant altogether. Some argue conspiracy theories are held only by a small fraction of the population (Sunstein & Vermeule, 2009). However, a small fraction of the population is still capable of causing severe harm. For example, consider the destruction of cell towers caused by only a few people in New Zealand due to the COVID-19 5G conspiracy theories (Daalder, 2020).

Conspiracy theories may be held as "quasi-beliefs" for entertainment purposes only and do not encourage any action (Vermeule & Sunstein, 2009). It must be noted that not all conspiracy theories have such a damaging impact even when endorsed. Westergaard et al. (2014) found that HIV conspiracy beliefs were strongly prevalent among White, Mexican-American, and African-American participants in the United States. All ethnic groups had a similar level of distrust in medical research however this did not influence their willingness to participate in HIV prevention research.

It is also reasonable to argue that conspiracy theories reflect a healthy process of being sceptical (Uscinksi, 2018). From this perspective, having a conspiracy mentality can be viewed as a healthy and natural process within a society in helping to keep a balance against powerful groups (Imhoff & Bruder, 2014; Uscinski, 2018). This is related to an idea of constructive conspiracism, which alludes to when conspiracy thinking does not create any societal or individual harm and achieves positive outcomes.

It is acknowledged that while some conspiracy theories remain just as conspiracy theories, some conspiracies have indeed come to light. However, conspiracy theories overall clearly do more harm than help, thus prompting the need for research on how to attenuate or correct this.

Reducing Conspiracy Thinking

The psychological literature on conspiracy theories has progressed from understanding the antecedents and consequences of conspiracy believing to now investigating how conspiracy believing can be corrected or prevented. As a younger research area, extant literature haves started to test the different methods that can dissuade individuals from conspiracy theories (Banas & Miller, 2013; Orosz et al., 2016). It is within this scope of the literature that we place

our point of research interest. Scholars have started to address whether anything can be done about the endorsement of conspiracy theories. As established in the previous sections, there are harmful consequences of endorsing unwarranted conspiracy theories. The following sections will discuss the literature on what methods have been tested to dissuade or persuade individuals from conspiracy adherence.

Conspiracy theories have a pattern of being resistant and difficult to correct as the self-perpetuating conspiracy mentality protects these beliefs. One strategy to prevent conspiracy adherence outlined in Sunstein and Vermeule (2009) may be through direct denial and counter-speech by government officials. The most direct technique for dispelling harmful beliefs is providing credible public information. However, this may not work straightforwardly for conspiracy theories because these attempts may also unintentionally legitimise it. Furthermore, any contrary evidence can be explained away or absorbed into the conspiracy theory by viewing the contrary evidence as a product of the conspiracy theory (Sunstein & Vermeule, 2009). It would not be surprising if a conspiracy theory proponent viewed contrary conspiracy evidence as intentionally planted by powerful conspirators to cover their tracks (Sunstein & Vermeule, 2009). The task of preventing conspiracy theorising is complex and the research focused on intervening in conspiratorial beliefs does not take this unrealistic and difficult approach. Therefore, the question of how to attenuate or dissuade individuals from conspiracy adherence has become pertinent for social scientists.

Interventions on Attenuating Conspiratorial Beliefs

Unfortunately, simply labelling something as a conspiracy theory does little to discourage conspiracy adherence (Wood, 2016). Fewer research studies have focused on preventing or correcting conspiracy persuasion and the literature thus far has taken different avenues to explore this.

For instance, Swami et al. (2014) found a relationship between belief in conspiracy theories with an analytical and intuitive thinking style disposition. Specifically, belief in conspiracy theories is significantly negatively correlated with the analytic thinking disposition and positively correlated with an intuitive thinking disposition. This suggests, on the whole, that an analytic thinking style is associated with lower conspiratorial ideation. In their pre and post-test experimental studies with undergraduate students, the results showed that eliciting analytic thinking by priming with a verbal fluency task effectively reduced participants' belief in conspiracy theories compared to a control group. Moreover, the results remained consistent when the elicitation of analytic thinking was repeated with a community sample.

Similarly, Bonetto et al.'s (2018) research also utilised priming resistance to persuasion. Bonetto and colleagues tested if merely priming undergraduate participants via completion of the resistance to persuasion questionnaire, would result to a reduction in conspiracy belief adherence. Results showed those in the priming condition had significantly lower scores of conspiracy adherence. The results of this study are proof of concept in showing that

manipulation of priming strategies can effectively influence the level of endorsement and conspiracy ideation.

In a similar line of investigation, other researchers have based their interventions on inoculation theory (McGuire, 1961a, 1961b). In short, inoculation theory is a biological metaphor that proposes that people's attitudes can be inoculated against persuasive information (such as conspiracy information) in the same way our immune systems can be inoculated against viral attacks (Compton et al., 2016). To put this another way, exposure to a weak persuasive argument that goes against the current attitude is purposeful for developing a resistance against future persuasion of stronger arguments (Compton et al., 2016). Banas and Miller (2013) tested whether inoculating individuals with counter-arguments would be effective in preventing attitude change towards a 9/11 Truth conspiracy. In addition to this, they also tested whether meta-inoculation messages (inoculation against inoculation) could also counter the inoculation treatment. In this study, the messages given in the inoculation and meta-inoculation conditions were either fact-based or logic-based messages. The results of this study found that when controlling for initial attitudes, inoculation conditions were able to induce significantly more resistance to the 9/11 Truth conspiracy compared to the control conditions. When inoculation results were teased apart further, the results showed that a fact-based inoculation message was significantly more effective in conferring resistance compared to a logic-based message.

Other findings by Warner and Neville-Shepard (2014) indicate that exposure to counterarguments to attenuate conspiratorial attitudes is a promising strategy. Warner and Neville-Shepard's pre-test-post-test research design centred on two different conspiracy topics: the Truther conspiracy and the Birther conspiracy. The Truther conspiracy refers to the 9/11 Truth movement involving various versions of a conspiracy theory about the event. The Birther conspiracy refers to conspiracy theories regarding Barack Obamas' birthplace. The results found that exposure to one-sided messages (messages which only endorsed the conspiracy) increased belief in the Truther conspiracy and the Birther conspiracy. Interestingly, being presented with debunking messages significantly reduced participants' belief in the Birther conspiracy, although not for the Truther conspiracy. Overall, results indicate that exposure to counter-conspiracy information (in this case, via the one-sided messages and debunking messages) effectively reduced conspiracy endorsement.

Other researchers such as Jolley and Douglas (2017) extended on the technique of exposure to counter-conspiracy information. More specifically, testing whether exposure to conspiracy or anti-conspiracy arguments would effectively influence belief in anti-vaccine conspiracy theory. Results showed that exposure to conspiracy arguments resulted in significantly lower intentions to vaccinate a fictitious child. Furthermore, when exposed to conspiracy information, belief in an anti-vaccine conspiracy was significantly greater than in the anti-conspiracy information or the control condition. Conversely, belief in an anti-vaccine

conspiracy was lowest for those exposed to anti-conspiracy information. Regarding the perception of the danger of vaccines, those exposed to conspiracy information had the highest scores of vaccines being dangerous. In contrast, those exposed to anti-conspiracy information had the lowest scores. In support of the inoculation theory mentioned in Banas and Miller (2013), when participants were presented with anti-conspiracy arguments prior to conspiracy arguments, this improved vaccination intentions.

In light of the literature mentioned above, it appears the experimental work so far has found success in interventions that utilised a method of presenting either pro or anti-conspiracy arguments to influence conspiracy adherence. This suggests a promising avenue for further research extending on this pattern. However, the limitations of prior conspiracy attenuation research need to be considered.

Limitations within Conspiratorial Research

The first point to address is that within the literature discussed above, participants tended to have lower levels of conspiracy theory endorsement because they were either already sceptical of conspiracy claims in initial tests or were excluded from the experiment and analyses for having high initial conspiratorial attitudes. This is important to highlight as the mechanisms previously used in the 'interventions' could have resulted differently for those with stronger conspiratorial beliefs who may have been more resistant to persuasion.

A second point to address is the restriction of results based on samples of student populations or via online crowdsourcing sites (Douglas & Sutton, 2018). While samples from Mechanical Turk may be more representative and allow us to draw more accurate inferences about conspiracy beliefs within the general public (Douglas & Sutton, 2018), there may still be limitations to recruiting participants who are more likely to engage in survey research. Despite the need for the most appropriate sample, this does not negate the real-world challenges in accessing such samples.

A third point to note refers to the nature of the research designs. There has been a clear shift from correlational research to experimental designs which sought to influence conspiracy theory beliefs. However, it can be argued that the results for these significantly effective interventions also prompt a need for longitudinal research and examinations into the duration of these effects.

The recurring requirement within these studies is that the content of the counter-conspiracy argument is provided to the participant, which needs to be tailored to the specific conspiracy theory belief. However, applying this technique as an intervention in the real world may not be effective as an umbrella intervention. It is acknowledged that due to the theoretical underpinnings of the intervention, such as in inoculation theory and priming resistance, the interventions therefore relied on providing participants with counter-conspiracy information. However, this may be problematic if research is seeking to extend an intervention that would be universal in dissuading individuals from a range of conspiracy narratives before misinformation

and conspiracy information establishes root. Therefore, an intervention which could be used as an umbrella technique would be advantageous. It appears then that the challenge for applied research would be to identify a strategy that could serve as an umbrella strategy for influencing conspiracy ideation in general. This would eliminate the need to provide specific arguments against the specific conspiracy theory topic. Taking these into account, the present study addresses this by testing whether we can influence the level of conspiracy mentality more broadly, as opposed to only influencing beliefs related to a specific conspiracy theory topic. Against this backdrop of theoretical and methodological limitations, this research study turned to the self-persuasion paradigm as a potential intervention tool for influencing conspiracy mentality.

Self-Persuasion Paradigm

In accord with much of the literature, the term self-persuasion refers to an indirect technique in which people take an active role in persuading themselves as a function of generating their own arguments about a specified topic (Briñol et al., 2012).

There are many variations of inducing the self-persuasion technique. One of the first examples of self-persuasion is presented in a classic study by Janis and King (1954) which involved self-generated messages via role-playing. Self-persuasion techniques have changed over time. Participants can write essays (Greenwald & Albert, 1968) or simply list their arguments (Damen et al., 2015). Self-persuasion is successful without the need for the participants to anticipate delivering their self-generated arguments to a potential audience (Müller et al., 2009).

Self-persuasion is more effective than listening to another person's arguments because the message is more salient, personally relevant, and memorable. People pay more attention to and dedicate more effort into processing arguments that are 'self-relevant' (Briñol & Petty, 2006). An explanation for the persuasive effect of self-persuasion is that when people generate their own arguments, they also generate arguments which they find to be the most compelling (Briñol et al., 2012; Greenwald & Albert, 1968). This may be due to the self being viewed as more important and valuable than any other person (Briñol et al., 2012). In other words, individuals are very effective in tailoring messages or arguments for themselves, even if the goal could be to persuade another person (Briñol, et al., 2012). An added benefit of self-persuasion is that it does not matter whether people are told to come up with an argument about the topic or whether they do so because they thought about the topic on their own (Briñol et al., 2012).

Self-Persuasion vs Direct-Persuasion

Self-persuasion messages are potentially more effective in changing individuals' attitudes and behavioural intentions than messages presented by others (direct persuasion) (Damen et al., 2015). Direct persuasion refers to when an intentional communicator or another source is delivering the message or argument. This results in voluntary change, whereas, in self-

persuasion, there is an absence of a communicators message (Greenberg et al., 2018). To put simply, in direct persuasion, the means of influence (as either arguments or statements) is provided by an external source instead of the argument or statement being self-generated (Aronson, 1999; Loman et al., 2018a).

Compared with a direct (external) form of persuasion, self-persuasion is less prone to correction. In other words, arguments that one generates are more convincing than arguments provided from external sources because individuals tend to correct information from another source. This is supported by Mussweiler and Neumann's (2000) findings that arguments provided by an external source are less convincing than arguments deliberated by oneself.

The advantage of self-persuasion compared to direct persuasion to influence attitude change is promising. What makes direct persuasion inferior to self-persuasion is that there is a chance of a boomerang effect within direct persuasion techniques because it triggers psychological reactance and reduces the persuasive attempt. Therefore, when arguments are generated by the person and received by that same person without correction, this minimises the risk of psychological reactance (Mussweiler & Newmann, 2000).

Literature on the Power of Self-Persuasion

Self-persuasion has been effective in changing health-related cognitions and behaviour. Earlier work by Müller et al. (2009) investigated whether self-generating anti-smoking arguments compared to reading prepared anti-smoking arguments was more effective in influencing smoking cessation. Muller et al.'s results found that those who self-generated anti-smoking arguments had longer wait times until they smoked their next cigarette compared to those who simply read anti-smoking arguments. In addition, whether participants did or not did light another cigarette within 30 minutes did not differ between the two experimental conditions. Muller et al. also make the claim that psychological reactance can be avoided by increasing the 'self-involvement'. In testing this, Muller et al found that those in the self-involvement condition waited significantly longer to light their next cigarette compared to those in the no self-involvement condition. In addition, those in a no self-involvement condition were more likely to smoke their next cigarette than those in the self-involvement. Overall, these results provide support that self-generating arguments is significantly more effective than providing external arguments to influence short-term smoking behaviour. In support of Muller et al.'s claim, Bernritter et al.'s (2017) investigation of 'self-involvement' as a moderator has been shown to produce stronger effects in self-persuasion relative to tipping behaviour. In other words, when involvement was high compared to moderate or low, self-persuasion was more effective compared to direct or no persuasion.

More recently, a study in 2018 by Stavrositu and Kim investigated whether self-persuasion or other-generated persuasion would effectively influence diet and exercise behaviour. A key result of this study found that over a period of 10 days, those in the self-persuasion condition

had significantly higher vegetable consumption compared to those in the other-generated persuasion condition.

Loman et al. (2018a) examined whether self-persuasion compared with direct-persuasion would successfully change participants' perception of alcohol risk, attitudes towards alcohol, intention to reduce alcohol consumption, and alcohol consumption within a student sample from the Netherlands. The results of this study found that self-generating anti-alcohol arguments compared to reading anti-alcohol arguments is successful in increasing alcohol risk perception, but not successful in influencing immediate alcohol consumption.

In a similar study, Loman et al. (2018b) recruited from a student population and examined whether self-persuasion compared to direct persuasion would influence alcohol consumption differently, based on whether the messages were framed as a question or not. This study found that the anti-alcohol posters that were framed as questions to the participants resulted in more self-generated arguments to drink less compared to the messages framed as statements. Furthermore, for participants who chose to drink during the one-hour observation period, the presence of the self-persuasion poster that contained the question message effectively reduced the amount of alcohol consumed compared to the presence of a direct persuasion poster or no poster. Overall, the self-persuasion studies discussed above demonstrate self-generated arguments as more effective than externally provided arguments. In short, self-persuasion is more effective than direct-persuasion.

Limitations within Self-Persuasion Research

Key limitations within the self-persuasion research have strongly influenced the study design of the present research. For example, Muller et al.'s study suggested additional experimental conditions were needed which argued the opposing side of the argument. In other words, a condition requiring pro-arguments and a condition that argued about an unrelated topic is needed to determine a baseline level. This methodological suggestion has been considered and supports the present research study design which includes a pro and anti-argument generation condition in addition to a control condition.

An additional limitation of these studies is the recruitment of the student samples. It is acknowledged that this sample type may limit the generalisability of results as university students are not representative of the wider population. Furthermore, extended observations to assess the longevity of the effects found within the self-persuasion research are needed. The present study attempts to address these limitations by recruiting from a community sample and including a follow-up measure to assess the longevity of an effect.

The Present Study

The purpose of this research study is to contribute to limited extant literature and further understand the ways people can be influenced to change their conspiratorial thinking tendencies. Uscinski (2018) urges researchers to be cautious in their efforts of discovering how to "cure" or correct people of their conspiracy believing as this could provide powerful groups more tools to

invalidate dissent. However, it is argued that the detrimental effects of conspiracy theory beliefs outweigh the concerns of potential misuse of interventions at this point in time.

The interventions used to attenuate or dissuade individuals from conspiracy theory adherence indirectly incorporated direct-persuasion. This pattern is evident upon closer inspection of the intervention approaches used. It becomes clear that successful interventions shared the approach of providing participants with pro or anti-conspiracy information, which is very much a key aspect of direct-persuasion. Providing participants with anti or pro-conspiracy arguments occurred through various methods such as the inoculation process (Banas & Miller, 2013), providing one-sided messages, providing pro and anti-conspiracy arguments as part of the debunking process (Warner & Neville-Shepard, 2014), or directly providing participants with pro and anti-conspiracy information (Jolley & Douglas, 2017). Given that self-persuasion is more effective than direct-persuasion, this prompted the question of whether self-persuasion would also be an effective intervention method for attenuating conspiracy adherence. In order to investigate this novel application of self-persuasion for dissuading individuals from conspiracy adherence, we ask the following research questions:

Research Questions

The first research question asks: what effect does engagement in a self-persuasion task have on general conspiracy thinking and conspiratorial suspicion about COVID-19?

The second research question asks: does engagement in a self-persuasion task have an effect on general conspiracy thinking and conspiratorial suspicion about COVID-19 after a delayed time period?

Research Hypotheses

H1. It was hypothesised that engagement in the anti-conspiracy self-persuasion condition would result in the lowest scores of conspiracy mentality and suspicion about COVID-19 than the pro-conspiracy and control condition.

H2. It was hypothesised that after a period of 2 weeks, the pro-conspiracy condition would show an increase in conspiracy mentality and suspicion about COVID-19 whereas the anti-conspiracy condition would show a decrease and the control condition showing no change.

H3. It was expected that participants in the pro-conspiracy self-persuasion task would be more willing to have conspiracy related information sent to them relative to the anti-conspiracy and control condition.

Method

Study Design

Ethics approval was granted from the Auckland University of Technology of Ethics Committee (AUTEC) before commencing the data collection phase of this study, see Appendix A. The present study utilised a quantitative research approach, using a mixed (between-groups/repeated-measures) experimental design to address the research questions. In our 2 (between-participants: pro-argument vs. anti-argument) x 2 (between-participants: conspiracy vs. control) x 2 (within-participants: Time 1, Time 2) mixed design, the repeated measures variable refers to the occurrence of two separate surveying periods. The first surveying period, hereafter referred to as Time 1, was completed directly after submitting the consent form. The second surveying session, hereafter referred to as Time 2, was completed after a 2-week delay.

Data was collected using Qualtrics (www.qualtrics.com), an online survey building platform. Qualtrics was used to create and host the surveys for two main reasons. Firstly, raw data can be easily extracted and fed into a data analysis software such as SPSS. Secondly, it is equipped with the appropriate tools for executing the survey-flow pathways needed to create a mixed design study, while still appearing as a simple online survey.

Separate surveys were created for the different stages of data collection and surveying periods. A customised URL link to access the Time 1 survey was listed in the recruitment flyer (see Appendix B). The recruitment flyer provided basic information about the research study and the inclusion criteria. The recruitment flyer also advertised the chance to enter a prize draw consisting of gift vouchers to encourage participation. Additionally, separate surveys were created to store participants' email addresses if they opted to enter the prize draw. This ensured that participants' contact details were kept separate from their questionnaire responses. For a more detailed overview of the study design and flow of participant randomisation, see Figure 1 on the next page.

Figure 1

CONSORT Flowchart of Study Design and Participants
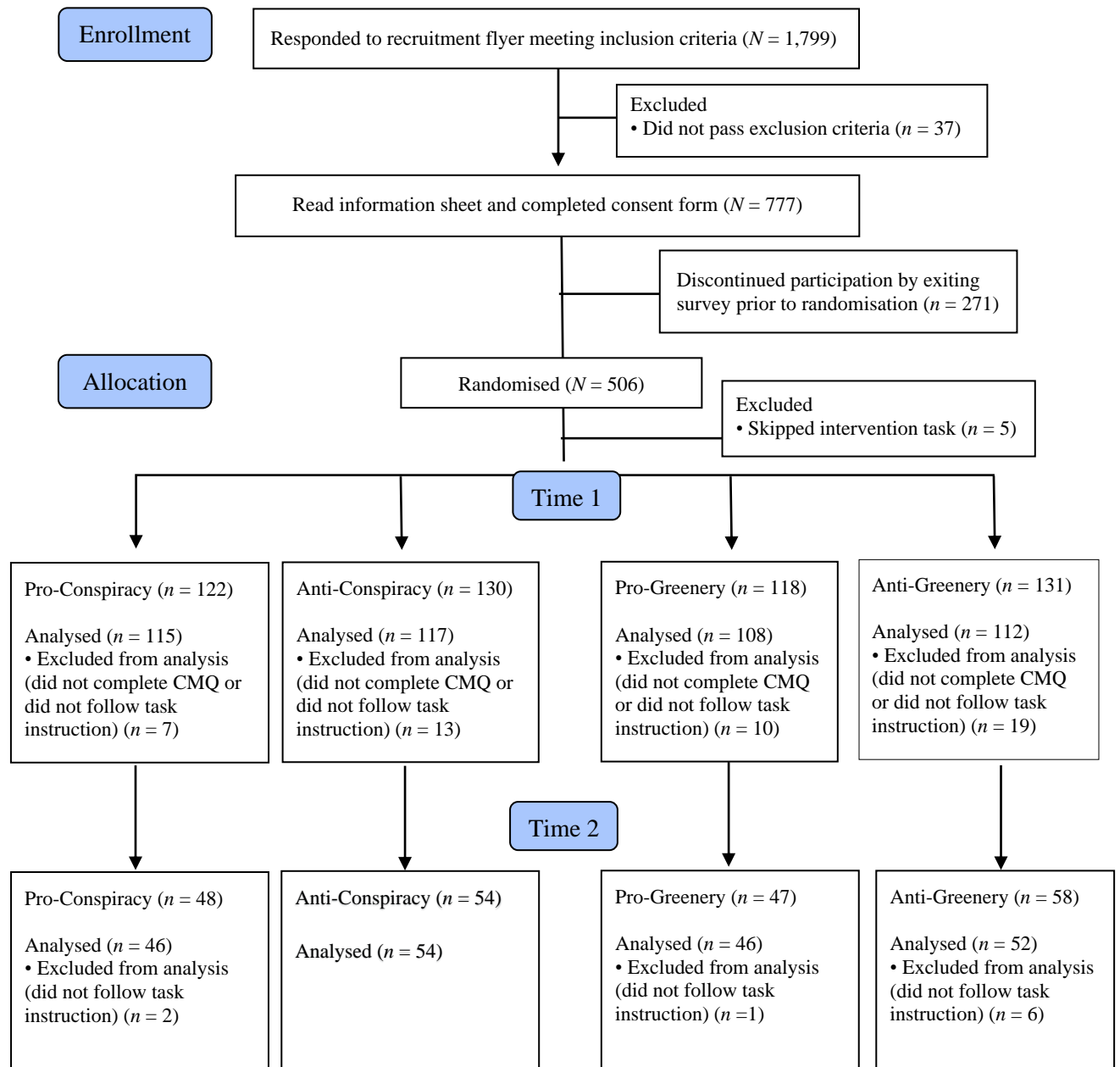
Inclusion and Exclusion Criteria

The inclusion criteria for potential participants in this study were: being at least 16 years old, fluent in English, and based in New Zealand. These inclusion criteria were listed in the recruitment flyer. An additional exclusion criterion was applied, which excluded current students of the research supervisors to satisfy ethical concerns. The exclusion criterion question was presented to potential participants on-screen when beginning the survey.

Sampling and Recruitment

A non-probability convenience sampling technique, which produced a voluntary response sample, was used to recruit potential participants. It is acknowledged that this

sampling technique has inherent sampling bias and limits the generalisability of the findings (Nardi, 2006). Ideally, probability sampling would always be used to ensure the sample is representative of the population via an accurate sampling frame (McIntyre, 2004). However, this sampling strategy was selected because of the time constraints of this Master's project and the ease of online access to potential participants irrespective of their geographical location.

The recruitment procedure for potential participants began with a recruitment flyer that outlined the study as an online survey that explored conspiratorial thinking (see Appendix B for flyer). Paper versions of the flyer were placed in various Auckland businesses, on community and supermarket notice boards, and Auckland University of Technology (AUT) notice boards at the city and south campuses. The digital versions of the flyer were advertised on social websites, which included Facebook, Instagram, Reddit, and Neighbourly (www.neighbourly.co.nz). The online public notice board called My Notice (www.mynotice.co.nz) was used to share the digital flyer across various New Zealand regions. Various AUT lecturers from a range of disciplines also shared the digital flyer to their students as a class announcement on the AUT blackboard system.

Participants

Participants were recruited from a student and community population across New Zealand. The recruitment flyer initially attracted 1,799 participants to access the link and read about this study. A total of 777 participants completed the consent form. However, 271 participants discontinued participation by exiting the survey. Therefore, 506 participants were randomised into an experimental group to begin the intervention task.

The final total sample consisted of $N = 452$ participants (116 men, 304 women, 10 non-binary, 5 preferred not to say, and 17 unreported responses) between the ages of 16 and 71 years old ($M = 33.87$, $SD = 12.63$) including 19 participants who did not report their age. It must be noted that $n = 49$ participants were excluded from the final sample due to incorrect or partial completion of the survey. The total sample size at Time 2 was $N = 198$. Further details of participants' demographic characteristics are displayed in Appendix C, Table 1.

Materials

Self-Persuasion Argument Generation Task

Participants in the pro-conspiracy and anti-conspiracy conditions were presented with a neutral passage about conspiracy theories before being prompted to complete the self-persuasion task. The passage was created drawing from the definition of a conspiracy theory in Bruder et al. (2013). The passage read:

> *A conspiracy theory is an alternative explanation to the established understanding of an event or situation. There are existing conspiracy theories for many different topics or events. Due to our incomplete knowledge of the world, conspiracy information may or may not be true. Conspiracy-related information is part of our everyday lives, circulated via direct discussion with others, newspapers, magazines, TV or the Internet.*

This makes conspiracy theories visible to the general public and people can decide whether to believe in them or reject them. Conspiracy theories can be helpful or harmful to society as there are pros and cons of exposure to such ideas.

The manipulated variable in the present study is the self-persuasion task. The self-persuasion task asked participants to write arguments about a specified topic. In the pro-conspiracy condition, participants were instructed to write arguments in favour of conspiracy theories. The writing prompt stated:

We'd like you to write arguments IN FAVOUR of conspiracy theories/conspiracy information only. Please list some reasons below for why you should not ignore conspiracy theories or conspiracy information.

In the anti-conspiracy condition, participants were instructed to write arguments against conspiracy theories/conspiracy information instead. The writing prompt stated:

We'd like you to write arguments AGAINST conspiracy theories/conspiracy information only. Please list some reasons for why you should ignore conspiracy theories or conspiracy information.

Control Conditions

In the control conditions, the self-persuasion topic was about a 'greener cities' initiative. The control conditions also serve as a check to ensure any potential effects would not be due to generating arguments for or against a topic or due to generating arguments in general. There were two control conditions: a pro-greenery control condition and an anti-greenery control condition. A passage about the fictitious 'greener cities' initiative was presented prior to the writing task prompt. This passage was created drawing from Heitland and Bohner's (2010) control condition instruction. The passage read:

There is a 'Greener Cities' initiative for more greenery in New Zealand cities. This initiative supports actions such as more parks and green spaces created and more trees planted at roadsides. However, there are pros and cons of this initiative. While some think this would create more spaces for relaxation, exercising and filter cleaner air, others are concerned about cleaning, maintenance, access control or finding suitable spaces for implementation.

Participants in the pro-greenery condition were asked to write arguments favouring a 'greener cities' initiative. The writing prompt stated:

We'd like you to write arguments IN FAVOUR of this initiative only. Please list some reasons below for why the 'Greener Cities' initiative is a good idea including its potential benefits.

Participants in the anti-greenery condition were asked to write arguments against this initiative. The writing prompt stated:

We'd like you to write arguments AGAINST the initiative only. Please list some reasons below for why the 'Greener Cities' initiative is not a good idea including its potential disadvantages.

Measures

Conspiracy Mentality Questionnaire (CMQ)

The Conspiracy Mentality Questionnaire (CMQ) developed by Bruder et al. (2013) is a theoretically unidimensional measure developed to assess a general tendency to believe in conspiracy theories. The CMQ has good cross-cultural generalisability. It is available in English, German, and Turkish, in which all versions have shown one-factor solutions with adequate internal consistency. The CMQ consists of five items such as 'I think that government agencies closely monitor all citizens' and 'I think that many very important things happen in the world, which the public is never informed about'. For each item, participants indicated on an 11–point scale how likely they thought each item to be true, ranging from 0 *(certainly not)* to 100 *(certain).* Each scale point was labelled with a 10–percentage point increase (0% – 100%). There are no reverse-coded items.

In this study, the CMQ had a Cronbach's alpha coefficient of .85 at Time 1 and .88 at Time 2. Previous studies that utilised the CMQ, such as Bruder et al. (2013), Lantian et al. (2016) and Freeman et al. (2020) have also reported good internal consistency with Cronbach's α of .83, .79, .88 respectively.

A total score for each participant was calculated based on the average of participants' responses. A higher total score indicates a higher degree of conspiracy mentality. For the complete list of the CMQ items, see Appendix B.

Flexible Inventory of Conspiracy Suspicion (FICS)

The Flexible Inventory of Conspiracy Suspicion (FICS) scale developed by Wood (2017) is a scale that can be adapted to measure conspiracy suspicion around nearly any conspiratorial topic of public interest. The flexibility of this scale is suitable for measuring a general predisposition for conspiratorial suspicion (Enders & Smallpage, 2018). The FICS scale is comprised of generic statements with blanks that can be filled in with a specific conspiracy theory topic. For example, 'an impartial, independent investigation of BLANK would show once and for all that we've been lied to on a massive scale'. In the present study, the blanks have been filled in with the word 'COVID-19' to assess conspiracy suspicions about COVID-19 specifically. The FICS scale consists of 17 items such as 'when it comes to COVID-19, most people are asleep and need to wake up'. For each item, participants indicated their level of agreement on a 5-point scale, ranging from 1 *(strongly disagree)* to 5 *(strongly agree).* According to Wood (2017), the FICS scale has very high reliability with Cronbach's α = .98. Salvador et al. (2019) reported Cronbach's α = .99 when the blank word was vaccines. In the present study, the FICS scale had a Cronbach's alpha coefficient of .98 at Time 1 and .98 at Time 2, suggesting excellent internal consistency.

A total score for each participant was calculated based on the average of participants' responses. A higher total score indicates greater conspiracy suspicion about COVID-19.

Intolerance of Uncertainty Scale (IUS-12)

The 12-item Intolerance of Uncertainty Scale (IUS-12) by Carleton et al. (2007) is an abridged scale. The original French 27-item Intolerance of Uncertainty Scale (IUS-27) by Freeston et al. (1994) was translated into English by Buhr and Dugas (2002). The IUS-12 measures a participant's intolerance for uncertain situations with 12 statements such as 'when it's time to act, uncertainty paralyses me,' and 'one should always look ahead so as to avoid surprises.' The IUS-12 was selected for the present study in the interest of reducing participant fatigue and based on the principle of parsimony. There are no reverse-coded items in this scale. Participants were asked to indicate the extent to which they agreed with each item on a 5-point scale, ranging from 1 *(not at all characteristic of me)* to 5 *(entirely characteristic of me).*

The IUS-12 is made up of two factors: prospective anxiety and inhibitory anxiety. Prospective anxiety reflects fears and anxiety for future events, whereas inhibitory anxiety refers to an inhibition of experiences or actions due to uncertainty. The prospective anxiety subscale consists of seven items (items 1,2,4,5,8,9,11). The inhibitory anxiety subscale consists of five items (items 3,6,7,10,12). According to Carleton et al. (2007), the IUS-12 has excellent internal consistency with Cronbach's $\alpha = .91$. Research by Khawaja and Heidi (2010) and Wu et al. (2021) also demonstrate excellent internal reliability, $\alpha = .90$ and $\alpha = .89$ respectively. In this study, the IUS-12 had a Cronbach's alpha coefficient of .90, indicating excellent internal consistency. The prospective and inhibitory anxiety subscales also had acceptable internal consistency, $\alpha = .84$ and $\alpha = .87$ respectively. For the complete list of IUS-12 scale items, see Appendix B.

A total score for each participant was calculated based on the average of participants' responses. Total scores were calculated separately for each of the subscales. A greater subscale score reflects a greater intolerance for uncertainty relative to the subscale type.

Behavioural Intention Measure

Participants' behavioural intention was measured by their willingness to receive information on COVID-19 conspiracy theories. The behavioural intention question asked:

Would you like to receive information about conspiracies of COVID-19?

Participants responded to this question by selecting either yes or no.

Topic Importance Measure

The perceived importance of conspiracy information or COVID-19 was measured with two different items. The first item asked:

Please indicate the importance of conspiracy information to you.

The second item asked:

How personally important are the issues related to COVID-19 to you?

Both items asked participants to rate their level of agreement on a 7-point scale ranging from 1 *(extremely unimportant)* to 7 *(extremely important)*.

Demographic Questions

Participants were asked to report their gender, ethnicity, highest obtained educational qualification, and age. For complete wording of these questions and response options, see Appendix B.

Procedure

The raw data was acquired using a survey approach in which participants completed online questionnaires created on Qualtrics. After viewing the participant information sheet and completing the required consent form (see Appendix B), participants were automatically redirected and randomly assigned by Qualtrics into one of the four argument-generation conditions (pro-conspiracy, anti-conspiracy, pro-greenery control, or anti-greenery control). In each of the conditions, participants generated arguments according to the writing prompt of their specific condition. After completing the argument generation task, all participants were asked to complete a collection of questionnaires consisting of the following self-report scales: the FICS scale, the IUS-12, the CMQ, topic importance questions, and a behavioural intention question. At the end of the first survey session, all participants reported their demographic data and were given a choice to opt in to complete the Time 2 survey before entering the prize draw. Participants who did not wish to participate in the Time 2 survey session were thanked and presented with the participant debrief sheet (see Appendix B). After two weeks, a link to the Time 2 survey was emailed to participants. The Time 2 survey included questionnaires from the FICS scale, IUS-12, CMQ, and the behavioural intention item. At the end of the Time 2 survey, participants were offered a chance to re-enter the prize draw. All participants were thanked and presented with the participant debrief letter.

The time lag between completion of the Time 1 and Time 2 survey was 14.55 days on average. Participants took approximately 32 minutes on average to complete the Time 1 survey and approximately 9 minutes on average to complete the Time 2 survey.

Data Screening and Preparation

All the survey data were downloaded from Qualtrics. During data cleaning, duplicate responses were removed from analyses. It is recognised that the use of an incentive in this study, specifically the prize draw, may encourage participants to attempt multiple completions of the surveys (Ilieva et al., 2002). The use of an incentive, such as entry into a prize draw, may have an unwanted effect on the quality of data. Participants may distort the data by completing surveys more than once to increase their chances of winning a prize (Ilieva et al., 2002). In this study, Qualtrics provided the option to ensure that respondents could only access the prize draw survey once from their IP address. However, Qualtrics did not stop multiple entries into the Time 1 survey. Therefore, the removal of duplicate responses is warranted.

No data imputation methods were utilised because participants who did not answer all the items for a scale had their responses removed entirely from that scale. Leiner (2019) has suggested using survey completion times to identify meaningless data. However, the average survey completion times were consistent with what was expected, without any unusually fast responses. In addition, participants were allowed to complete the online writing task with no time restrictions. Therefore, excluding participants from final analyses based on survey completion time alone was not warranted.

Inter-Rater Agreement

The self-persuasion task was an open-ended writing task that required participants to generate arguments for or against the specified topic. It is known that open-ended questions raise the issue of reliability because participant responses could be interpreted differently (Nardi, 2006). Therefore, a second rater also coded the argument responses according to whether the task instruction was followed. The researcher and a second-rater used a simple coding system. Participants with responses that followed the task instruction were coded as YES. Participant responses were coded as NO if participants wrote arguments in the opposite direction to what the task requested, explicitly stated a refusal to complete the task instruction, wrote something unrelated/irrelevant to the instruction topic, or only copied the reasons listed in the passage in their response. To assess the inter-rater reliability, Cohen's Kappa was run to determine the agreement between the two raters. Results showed substantial agreement between raters, $\kappa = .86$, 95% CI [.77, .96], $p < .001$.

Validity of FICS Scale

Prior research has not yet used the Flexible Inventory of Conspiracy Suspicion (FICS) scale with the word COVID-19 as the topic. To demonstrate psychometric support for this scale, a principal axis factor analysis (FA) was conducted on the 17 items of the FICS scale. The minimum amount of data needed for factor analysis was satisfied and scree plots indicated a single-factor solution.

<center>**Results**</center>

Preliminary Analyses

Randomisation Check

   The 'randomizer' feature of Qualtrics online survey platform was used to randomly assign participants into their experimental conditions. The use of the randomizer feature also ensures that allocation is concealed. However, the feature was also checked to select an option which ensures that an even presentation of the different conditions was presented overall. It is assumed that no errors were made by Qualtrics in this random assignment. It is acknowledged that groups do not need to be perfectly equal across experimental conditions as the statistical tests used for analyses take this potential error into account.

   Evidence suggests that that randomisation was successful and a heterogenous sample was captured overall. Chi-square test analyses revealed there were no significant differences between the four experimental conditions in the distribution of gender, $\chi^2(3, N = 435) = 13.71$, $p = .13$ and in the distribution of age groups (16-24 years, 25-65 years, 65 years and over), $\chi^2 (2, N = 433) = 4.56$, $p = .6$.

Attrition Rate

   The attrition rate is important to consider because attrition can lead to bias. The overall attrition rate in this study was 52.3%. The attrition rates between Time 1 and Time 2 for each experimental group separately were relatively similar, at least 50% attrition. In this study, it was observed that while some participants opted into completing the Time 2 survey, they had provided an email address with spelling errors. For example, writing .con instead of .com. This was found post-hoc. Although Qualtrics has a tool to ensure an email address is written in the textbox, this feature appears limited.

Collapsing the Two Control Conditions

   An independent-samples t-test was used to determine no differences between our two control groups (pro-greenery and anti-greenery) on either of the outcome variables (FICS, $t(214) = 1.12$, $p = .26$ and CMQ, $t(218) = 0.35$, $p = .72$).

   We also conducted a 2x2x2 factorial mixed ANOVA, which found argument topic (conspiracy vs control), argument direction (pro vs anti), and time (Time 1 vs Time 2) did not interact on either of our dependent variables. Therefore, we collapsed the two control conditions into one for analyses.

Descriptive Statistics

   Correlational analyses were conducted to assess the relationships between the study variables. As shown in Table 2 below, there is a statistically significant moderate positive correlation between conspiracy mentality (CMQ) measured at Time 1 and Time 2 and topic importance. This correlation indicates that an increase in general conspiracy mentality is associated with an increase in the perceived importance of conspiracy information. Similarly,

<div align="right">27</div>

conspiracy suspicions about COVID-19 (FICS) measured at Time 1 and Time 2 is moderately positively correlated with topic importance. This correlation indicates that conspiracy suspicion about COVID-19 is associated with an increase in the perceived importance of conspiracy information. Interestingly, the relationship between conspiracy suspicion about COVID-19 (FICS) and the perceived importance of COVID-19 issues was not statistically significant.

Table 1

Pearson Correlations between Study Variables Measured at Time 1 and Time 2

Variable	1	2	3	4	5	6	7	8	9
1. CMQ Time 1	–								
2. CMQ Time 2	.84**	–							
3. FICS Time 1	.68**	.70**	–						
4. FICS Time 2	.66**	.71**	.94**	–					
5. IUS–12 Subscale 1	.22**	.15*	.16**	.14*	–				
6. IUS–12 Subscale 2	.29**	.28**	.22**	.24**	.73**	–			
7. IUS-12	.27**	.22**	.20**	.19**	.95**	.91**	–		
8. Topic Importance 1	-.10*	.03	-.05	-.02	.13**	.06	.11*	–	
9. Topic Importance 2	.52**	.52**	.56**	.52**	.22**	.29**	.27**	.03	–

Note. CMQ = Conspiracy Mentality Questionnaire, FICS = Flexible Inventory of Conspiracy Suspicion scale, IUS-12 = Intolerance of Uncertainty, Topic Importance 1 = perceived importance of COVID-19, Topic Importance 2 = perceived importance of conspiracy information.

* p < .05. ** p < .001.

In this study, we assessed whether engagement in a self-persuasion argument-generation task would effectively influence one's general conspiracy mentality and additionally, one's conspiratorial suspicion about COVID-19. The mean scores and standard deviations for participants general conspiracy mentality as measured by the CMQ is displayed in Table 3 below. The mean score results indicate a general trend of decreased conspiracy mentality scores across all experimental conditions from Time 1 to Time 2. With regards to participants conspiracy suspicions about COVID-19, as measured by the FICS scale, the mean scores displayed in Table 4 below also indicate a general trend of decreased conspiratorial suspicion from Time 1 to Time 2.

Table 2

Means and Standard Deviations for Conspiracy Mentality (CMQ) Scores Across Study Conditions Measured at Time 1 and Time 2

Time period	Pro-conspiracy			Anti-conspiracy			Control		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Time 1	115	6.3	2.04	117	6.10	2.04	220	6.29	1.95
Time 2	46	5.29	1.79	54	5.35	1.95	98	5.59	2.10

Note. $N = 452$ for Time 1 measured after intervention task, $N = 198$ for Time 2 measured after delayed period.

Table 3

Means and Standard Deviations for COVID-19 Conspiracy Suspicion (FICS) Scores Across Study Conditions Measured at Time 1 and Time 2

Time period	Pro-conspiracy			Anti-conspiracy			Control		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Time 1	115	2.10	1.17	115	1.93	0.98	220	2.14	1.14
Time 2	46	1.85	1.03	54	1.77	1.04	98	2.08	1.18

Note. $N = 450$ for Time 1 measured after intervention task, $N = 198$ for Time 2 measured after delayed period.

Primary Analyses

To answer our first and second hypotheses, we examined the effectiveness of self-generated arguments in influencing conspiratorial thinking. A 3 (pro-conspiracy, anti-conspiracy, control) x 2 (Time 1, Time 2) mixed factorial Analysis of Variance (ANOVA) was conducted on our survey data for each of the two dependent variables. The first dependent variable was Conspiracy Mentality measured by the CMQ and the second dependent variable was Conspiratorial Suspicion about COVID-19 measured by the FICS.

Conspiracy Mentality (CMQ) Mixed-ANOVA

A mixed between-within subjects ANOVA was conducted to assess the impact of the three different argument generation interventions on participants conspiracy mentality scores across two time periods (Time 1 and Time 2).

There was no significant interaction between the argument generation intervention and Time, Wilks' Lambda = .1, $F(2,195) = .48$, $p = .62$, $\eta_p^2 = .01$. There was a large main effect for time, Wilks' Lambda = .86, $F(1, 195) = 30.80$, $p < .001$, $\eta_p^2 = .14$, with all three conditions showing a reduction in their conspiracy mentality scores from Time 1 to Time 2 (see Table 3 for Mean scores). The main effect which compared the three argument-generation type was not

significant, $F(2, 195) = .70$, $p = .50$, $\eta_p^2 = .007$, suggesting no difference between the argument generation tasks.

Conspiratorial Suspicion About COVID-19 (FICS) Mixed-ANOVA

A mixed between-within subjects ANOVA was conducted to assess the impact of the three different argument generation interventions on participants conspiratorial suspicion about COVID-19 across the two time periods (Time 1 and Time 2).

There was no significant interaction between the argument generation intervention and time, Wilks' Lambda = .1, $F(2,195) = 0.35$, $p = .707$, $\eta_p^2 = .004$. The main effect for time was not significant, $F(1,195) = 0.08$, $p = .783$, $\eta_p^2 = .00$, and the main effect which compared the three argument generation groups was also not significant, $F(2,195) = 1.51$, $p = .223$, $\eta_p^2 = .015$.

Behavioural Intention Chi-Square Analyses

To answer our third hypothesis, a Chi-Square test of association was conducted to compare participants willingness to receive information about conspiracies of COVID-19 at Time 1 and at Time 2 across the three experimental conditions.

At Time 1, the chi-square analysis revealed no statistically significant association between the type of experimental conditions and participants' choice to receive conspiracy information about COVID-19, $\chi^2(2, N = 436) = 0.47$, $p = .79$. For each of the experimental conditions (pro-conspiracy arguments, anti-conspiracy argument and control), the proportion of participants who wanted to receive information about COVID-19 conspiracies is not statistically significantly different to the proportion of participants who did not want to receive information about COVID-19 conspiracies. See Table 5 for chi-square crosstabs.

Interestingly, at Time 2, the chi-square test of independence indicated results to be marginally significant, $\chi^2(2, N = 198) = 5.5$, $p = .06$. Within the pro-conspiracy argument condition, the proportion of participants who were not willing to receive information about COVID-19 conspiracies is significantly greater than those who were willing to receive information about COVID-19 conspiracies, demonstrating an inverse result to our hypothesis. See Table 6 for chi-square crosstabs.

Table 4

Crosstabs Table of Participant Willingness to Receive COVID-19 Conspiracy Information by Group Condition at Time 1

| | Choice to receive COVID-19 conspiracy information | | | |
| | Yes | | No | |
Group	*n*	%	*n*	%
Pro-conspiracy	38	34.2	73	65.8
Anti-conspiracy	34	30.4	78	69.6
Control	66	33.0	147	69.0
Total	59		139	

Note. n = number of participants. % = column percentage.

Table 5

Crosstabs Table of Participant Willingness to Receive COVID-19 Conspiracy Information by Group Condition at Time 2

| | Willing to receive COVID-19 conspiracy information | | | |
| | Yes | | No | |
Group	*n*	%	*n*	%
Pro-conspiracy	20	43.5	26	56.5
Anti-conspiracy	13	24.1	41	75.9
Control	26	26.5	72	73.5
Total	59		139	

Note. n = number of participants per group condition. % = column percentage.

Secondary Analyses

A series of ANCOVA analyses was conducted for two different covariates. The first covariate refers to participants perceived topic importance and the second covariate refers to participants intolerance of uncertainty. The between-subjects factor was the 3 different group conditions, and the within-subjects factor was the dependent variable mean scores at Time 1 and Time 2.

Topic Importance ANCOVAs

Conspiracy Mentality (CMQ) ANCOVA

After controlling for the perceived topic importance of conspiracy information, there was no statistically significant difference in adjusted mean scores of conspiracy mentality between the three experimental groups, $F(2, 194) = 0.97$, $p = .38$, $\eta_p^2 = .010$. There was a non-significant interaction between the group conditions and time, $F(2, 194) = .50$, $p = .60$, $\eta_p^2 = .005$.

Conspiratorial Suspicion About COVID-19 (FICS) ANCOVA

After controlling for the perceived importance of COVID-19 issues, there was no statistically significant difference in adjusted mean scores of COVID-19 conspiracy suspicion between the three experimental groups, $F(2, 194) = .1.45$, $p = .24$, $\eta_p^2 = .015$. There was a non-

significant interaction between the group conditions and time, $F(2, 194) = .47$, $p = .63$, $\eta_p^2 = .005$.

Intolerance of Uncertainty (IUS-12) ANCOVAs

Conspiracy Mentality (CMQ) ANCOVA

After controlling for intolerance of uncertainty, there was no statistically significant difference in adjusted mean scores of conspiracy mentality between the three experimental groups, $F(2, 194) = 0.54$, $p = .58$, $\eta_p^2 = .006$. There was a non-significant interaction between the group conditions and time, $F(2, 194) = .46$, $p = .63$, $\eta_p^2 = .005$.

Conspiratorial Suspicion About COVID-19 (FICS) ANCOVA

After controlling for intolerance of uncertainty, there was no statistically significant difference in adjusted mean scores of conspiracy COVID-19 suspicion between the three experimental groups, $F(2, 194) = 1.26$, $p = .29$, $\eta_p^2 = .013$. There was a non-significant interaction between the group conditions and time, $F(2, 194) = .49$, $p = .61$, $\eta_p^2 = .005$. Overall, the ANCOVA analyses revealed that participants' conspiracy mentality or conspiracy suspicion about COVID-19 did not change when controlling for participants perceived importance of the topic or when controlling for participants intolerance of uncertainty.

<div align="center">**Discussion**</div>

Overview of the Results

As established by the literature review section of this thesis, a younger area of research within the scholarly conspiracy literature has examined how conspiracy believing can be attenuated or prevented (Banas & Miller, 2013; Bonetto et al., 2018; Jolley & Douglas, 2017; Swami et al., 2014; Warner & Neville-Shepard, 2014). Also established in the literature review was the effectiveness of using a self-persuasion intervention (Loman et al., 2018b; Müller et al., 2009; Stavrositu & Kim, 2018). The successful interventions based on self-persuasion inspired the present research study to extend on this research area by examining whether self-persuasion would be an effective intervention tool for attenuating conspiracy thinking.

The research questions asked:

What effect does engagement in a self-persuasion task have on general conspiracy thinking and conspiratorial suspicion about COVID-19?

Does engagement in a self-persuasion task have an effect on general conspiracy thinking and conspiratorial suspicion about COVID-19 after a delayed time period?

An experimental study design was utilised to address the research questions. Overall, the results showed that participants, whether they engaged in self-persuasion about conspiracy theories or not, did not differ in their conspiracy thinking tendency scores or their conspiratorial suspicions about COVID-19. In addition, these results remained true when controlling for the perceived importance of the COVID-19 issue, the perceived importance of conspiracy information, and participants' intolerance of uncertainty.

Furthermore, participants' choice to receive more information about COVID-19 conspiracies was not affected whether they were asked to generate pro or anti-conspiracy arguments. Interestingly, the results revealed participants conspiracy mentality decreased at Time 2 compared to Time 1 irrespective of which self-persuasion task they had completed. It is plausible that due to the large attrition rate across the experimental conditions, the significant finding of the decrease in the Time 2 conspiracy mentality scores compared to Time 1 may have been responsible for this. In other words, there may have been a systematic drop-out of those who had stronger conspiracy mentality.

The overall decrease in participants' conspiracy mentality irrespective of whether they completed the self-persuasion task about conspiracies or a greenery initiative from Time 1 to Time 2 may be due to the time the surveys were publicised. The New Zealand national lockdown was lifted at the time these surveys were publicised. It is plausible to suggest that the decrease in conspiracy mentality and COVID-19 conspiratorial suspicion may have been due to these events.

Contrary to the hypotheses and previous research findings discussed in the literature review, the results of this research study did not support self-persuasion as an effective tool in

attenuating conspiracy thinking in the intended direction. A factor which may explain why self-persuasion was not successful in attenuating conspiracy mentality refers to differences in the approaches and methods which were utilised in this study. For example, prior self-persuasion research had only been successful in influencing desired outcomes such as increasing alcohol risk perception (Loman et al., 2018b), increasing vegetable consumption (Stavrositu & Kim, 2018), increasing tipping behaviour (Bernritter et al., 2017) and increasing the delay of cigarette smoking (Muller et al., 2009). In the present study, the desired outcome was a novel outcome of attenuating participants' general conspiracy thinking mentality or conspiracy suspicion about COVID-19.

In addition, it may have been worthwhile to consider if self-persuasion would have been effective in influencing a specific conspiracy belief, given that prior research had found attenuation of specific conspiracy belief to be successful (Banas & Miller, 2013; Jolley & Douglas, 2017; Warner & Neville-Shepard, 2014). However, this was not the aim of this research study which sought to influence broader conspiracy mentality. It would be interesting to test whether self-generating arguments about a specific conspiracy theory influences belief in that specific conspiracy theory.

It is noted that a strength of this research study may be the relatively large sample size which increases our confidence in capturing sample representativeness, despite the online convenience sampling method. However, the sample is not entirely representative of the New Zealand population. The recruited sample were relatively heterogeneous and a culturally diverse sample on the one hand. On the other hand, it is plausible to conclude that due to the inclusion criterion specifically requiring New Zealand based participants, the sample recruited is geographically limited and, therefore, a homogenous sample on the whole. The implication of restricting participants to New Zealand based participants only restricts the generalisability of results.

Limitations and Delimitations of the Present Study

The present study is not without methodological flaws. Firstly, it is acknowledged that this research study used an experimental research design, which is the best design for demonstrating cause and effect relationships. A limitation of experimental designs is that highly controlled settings may not allow results to be generalised to real-world situations, therefore limiting external validity (Privitera, 2014). Arguably, using an experimental research design affects mundane realism because it is not occurring in a naturalistic setting. However, self-persuasion was introduced within this study as it would be in the real world. More specifically, self-persuasion was initiated by prompting another person to elaborate on arguments for a position, which can be done in everyday conversation.

Another methodological limitation worth addressing is the execution of data collection via an online survey instead of within a laboratory setting. Online surveys have become increasingly popular among researchers in the last two decades (Schlosser & Mays, 2018). The

use of an online survey method has the advantage of minimising financial costs and speeding up data collection because the data is received as soon as the respondent submits. The data can then be downloaded, saving time with data entry processes compared to the conventional mail survey method (de Leeuw, 2012). Online surveys provide participants with privacy and comfort to take their time completing the survey. The private nature of online surveys can reduce socially desirable responses compared to in-person or telephone interview methods (de Leeuw, 2012). It was assumed that the online survey method used in this research encouraged participants to provide sincere answers to the questions. However, it must be highlighted that participants did not complete the surveys anonymously; therefore, participants' candour may have been hindered. From the participant's perspective, submitting an online questionnaire requires less effort than submitting a printed questionnaire (Leiner, 2019). From the perspective of the researcher, utilising the online survey method allows metadata (data about the data) and paradata (also known as process data) to be recorded (Callegaro, 2013). While there are clear advantages of online surveys, there are also limitations. Specifically, online surveying methods need to consider the internet coverage of the population and the potential under-representation of groups such as elderly and non-response groups (de Leeuw, 2012). The present study was limited to people in New Zealand and predominantly publicised on various social media platforms. The decision to collect data through online surveys and publicise the study on the internet may have reduced the potential under-representation of sub-groups. While internet coverage is a concern, internet penetration is reasonably high in New Zealand. More specifically, 82% of the population in New Zealand were active internet users in January 2021 (Statista.com, 2021). In addition, Gosling et al. (2004) claim that internet samples, while not wholly representative of the population, are at least as diverse as other samples recruited via other methods.

Another critical issue to consider when using an online survey method to collect data is whether data quality is affected by completion from a standard computer or mobile phone device (Schlosser & Mays, 2018). Evidence suggests that completion rates from mobile devices compared to PC differ with higher drop-out rates from mobile surveys than PC surveys (Ilieva et al., 2002). This study utilised Qualtrics's mobile-friendly design tool to ensure accessibility and completion from both types of devices, therefore, capturing a range of response types. In this study, the experimental manipulation involves using an open-ended question within the survey. It is conceivable that response length can differ based on the device type used. However, empirical research on this is mixed. Mavletoa (2013) found that mobile phone-based responses to open-ended questions were shorter than PC surveys, whereas Bosnjak et al. (2013) concluded no differences. Qualtrics can allow researchers to use embedded data on whether the survey was completed via mobile or on a computer. Future research may want to examine if the device type used in the argument generation task influences the length of response type. This

would be interesting to examine as self-persuasion has noted that shorter responses were more effective than longer responses in strengthening the self-persuasion effect.

The alternative to relying solely on an online surveying method is to employ multi-mode strategies when collecting data, such as approaching potential participants via email in addition to online surveys (Ilieva et al., 2002). Personalised emailing would be beneficial in controlling who is recruited, and there would be a reduction in the incentive to participate only for entry into a prize draw (Ilieva et al., 2002). However, in the interest of minimising the overall time of data collection and avoiding introducing more bias, a multi-mode strategy was beyond the scope of this study.

Another notable limitation of this research design is the absence of an instrument or exclusion criterion to confirm whether the sample was clinical or non-clinical. This is because schizotypy is correlated with and a predictor of conspiracy (Darwin et al., 2011). Without an item or exclusion criterion to rule this potentially confounding explanation, the results would not serve as an accurate baseline compared with other research study results. This limitation presented itself during the cleaning and coding stage of participants' responses. More specifically, one participant mentioned having schizophrenia. In saying this, the data did not reveal extreme outliers to warrant exclusions from final analyses.

This study did not conduct a pilot study to ensure the argument-generation prompt was clearly understood. This limitation questions the experimental realism of our research study. This limitation came to light in a few participant responses who stated their confusions and ambiguity around the argument-generation prompt. While individual interpretation may always be a concern, including a pilot study would increase confidence that the argument-generation prompt was successful. Similarly, the inclusion of questions or items serving as a manipulation check would give the researchers confidence that the different conditions in this study were perceived as intended and therefore produced the intended effect.

This research study also measured the covariates after the experimental manipulation. While it is stressed in many statistics books that covariates would ideally be measured before the experimental manipulation, we did not do this to ensure that the covariate items did not also prime participants before completing the intervention task.

Other methodological limitations which need to be considered include the self-selecting sample. It is reasonable to suspect that those highly interested in conspiracy theories would be more attracted and inclined to participate in this research and vice-versa. This potential bias means that for participants who may have had much stronger pre-existing conspiracy theory endorsement, the self-persuasion intervention task may not have been powerful enough to overcome the potential resistance or psychological reactance.

Participants' responses may have been vulnerable to socially desirable responses. Some participants may have experienced evaluation apprehension. There is evidence in participants' responses to the argument-generation task that shows some participants were concerned about

being viewed as conspiracy theory endorsers. The reluctance to be viewed as an endorser could have potentially influenced the level of honesty in the participants' answers on our dependent variables, which would minimise the effect of self-persuasion and lead to type 2 errors in our results. While the conspiracy passage presented to participants aimed to be neutral, it is clear that this passage could have been more strongly worded and tested.

On the note of participants' inclination to participate, it is acknowledged that because a prize draw was used as motivation for participation, this increased the risk of duplicate, meaningless responses. As de Leeuw (2012) has cautioned, researchers should take great care in how invitations are phrased to potential participants in online surveys. The dilemma researchers are faced with is that if an invitation does not mention the topic, the potential interest is not raised much, leading to a higher non-response rate. However, suppose invitations mention too much information about the topic. In that case, the study is vulnerable to a non-response error because only a particular group with specific strong opinions will participate.

Another notable limitation refers to order effects. In the present study, no scale items or questionnaires were randomised on their order of presentation. The absence of a counter-balancing method to deal with potential order effects suggests our results may have been due to the conspiracy mentality questionnaire being presented first across both survey sessions. In defence of this decision, the order of the questionnaires was not reversed based on a priori that participants may feel fatigued and exit the survey early on. Therefore, the fixed presentation of the questionnaires was determined based on its importance for data analyses.

Suggestions for Future Research

In light of the research findings and limitations noted above, the methodological and theoretical suggestions for future research will be discussed. The most notable suggestion is based on the significant finding of decreases in conspiracy mentality scores across all conditions after a delay of at least 2 weeks. Future investigations testing a more extended delay period on this effect may reveal insight into the longevity of this surprising result or discover that different trends or patterns might start to emerge.

Another suggestion for future research is testing beyond the New Zealand sample. Participants' average responses for conspiracy mentality across all conditions were either undecided or somewhat likely. Furthermore, participants' average responses for suspicions about COVID-19 conspiracy theories were also generally low. This raises the question of whether participants from countries with a different political and cultural setting, where conspiracy theories strongly circulate, may have stronger opinions and belief systems, and would therefore be influenced by self-persuasion differently. For example, individuals from the United States of America may score higher on conspiracy suspicion about COVID-19. This is considering that 71% of Americans had heard 'a little bit' about the COVID-19 plandemic conspiracy theory. In addition, 19% of Americans had heard 'a lot' about the COVID-19

plandemic conspiracy theory and 36% of those who had heard 'a lot' about plandemic also agreed it to be 'probably true' (Mitchell et al., 2020).

As this study was a novel test of the application of the self-persuasion paradigm on conspiracy thinking, future research may want to consider the boundary conditions of self-persuasion, which could enhance the effect of self-persuasion. One suggestion may be to include a manipulation to ensure the participant perceives that the self-persuasion task's argument direction (whether for or against) has not been imposed. This may provide fruitful results as prior research has confirmed that the perception of freedom of choice in a self-persuasion paradigm is beneficial to creating a strengthened effect.

Future research may want to impose a time restriction for the self-persuasion task. It was considered whether allowing participants more time (or, in this case, no time limit) would also lead to an increased perception of self-involvement, which strengthens self-persuasion effects as suggested by Müller et al. (2009). Contrary to this assertion, Stavrositu and Kim (20018) argued that allowing different times to be spent on the argument-generation task would increasingly introduce alternative explanations. Therefore, time limits should be equal for all participants.

Including an item in future research studies which assesses the effort that participants put into generating their arguments may be advantageous. As discussed in the literature review, self-persuasion is superior to direct persuasion. However, the level of effort in the self-persuasion task may influence the effectiveness of the self-persuasion. Including a manipulation or measure to check for this, such as the argument-generation task's word count, could provide insight. This suggestion is prompted by prior research that found that listing fewer arguments is more effective than listing many arguments in influencing participants' intention to help someone else (Muller et al., 2017).

Regarding the statistical analysis aspect of this research, it must be noted that we did not apply a Bonferroni correction to cut-off p values. This should be considered when interpreting the marginally statistically significant or significant results of this study.

From a qualitative research approach, further examination of the arguments generated during the self-persuasion task could provide insight into the overarching concerns regarding the acceptance or dismissal of conspiracy theory information. Text analysis results would inform researchers on the type of arguments participants are asked to generate in the self-persuasion task. However, such an analysis was beyond the scope and time frame of this thesis.

Similarly, it may be worthwhile for future research to tease apart the types of arguments generated by whether they are fact-based or logic-based. Prior research on inoculation theory revealed that different argument types effectively influence belief in a specific conspiracy theory. In a similar vein, future research may use other methods such as interviews with firm conspiratorial believers to understand the underlying arguments prior to testing self-persuasion specifically within this sample.

Conclusion

This study set out to determine whether self-persuasion would be an effective tool for attenuating conspiracy thinking. This study aimed to test if conspiracy thinking or conspiratorial suspicions about COVID-19 would be influenced immediately after engaging in a self-persuasion argument-generation task and after a delayed time period.

Surprisingly, the results of this study were not in line with previously published literature which demonstrated the successful application of self-persuasion to encourage desired outcomes such as smoking behaviour or reduced alcohol consumption. To summarise the results, we did not find evidence that self-persuasion effectively influenced participants' conspiracy thinking tendency or conspiracy suspicions about COVID-19.

As highlighted previously, this study is the first to examine self-persuasion as an intervention tool for attenuating conspiracy thinking. Despite the non-significant findings, this research study makes a noteworthy contribution in enhancing the overall understanding of conspiracy thinking and further highlighting the complexity of conspiracy theory beliefs.

Aside from the methodological limitations that may have affected this research study's results, a fundamental limitation due to the nature of the topic itself is that, in general, people may not want to admit their genuine endorsement of conspiracy theories. This creates an ongoing challenge for researchers who want to test for genuine effects of attenuation. Further investigations extending from the self-persuasion line of thinking may still be worthwhile. Future research studies that consider the boundary conditions of self-persuasion and conspiracy thinking are recommended. In other words, future investigations interested in conspiracy mentality attenuation may produce insightful findings if our methodological and theoretical suggestions are carefully considered.

References

Ankel, S. (2020, May 18). Law enforcement officials fear that the US will see an increase in arson and violence linked to 5G conspiracy theories, according to reports. *Business Insider*. https://www.businessinsider.com.au/coronavirus-violence-feared-as-5g-conspiracy-theories-reach-us-abc-2020-5

Aronson, E. (1999). The power of self-persuasion. *American Psychologist, 54*(11), 875–884. https://doi.org/10.1037/h0088188

Banas, J. A., & Miller, G. (2013). Inducing resistance to conspiracy theory propaganda: Testing inoculation and metainoculation strategies. *Human Communication Research, 39*(2), 184–207. https://doi.org/10.1111/hcre.12000

Barron, D., Morgan, K., Towell, T., Altemeyer, B., & Swami, V. (2014). Associations between schizotypy and belief in conspiracist ideation. *Personality and individual differences*, *70*, 156–159. https://doi.org/10.1016/j.paid.2014.06.040

Bartholomew, R. (2020, April 9). 5G Conspiracy Theories Are Sweeping the Planet. Why? *Psychology Today*. https://www.psychologytoday.com/nz/blog/its-catching/202004/5g-conspiracy-theories-are-sweeping-the-planet-why

Bennett, W. L., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of communication*, *58*(4), 707–731. https://doi.org/10.1111/j.1460-2466.2008.00410.x

Bernritter, S. F., van Ooijen, I., & Müller, B. C. N. (2017). Self-persuasion as marketing technique: The role of consumers' involvement. *European Journal of Marketing, 51*, 1075–1090. https://doi.org/10.1108/EJM-04-2015-0213

Bessi, A., Coletto, M., Davidescu, G. A., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2015). Science vs conspiracy: Collective narratives in the age of misinformation. *PLOS ONE*, *10*(2), 1–17. https://doi.org/10.1371/journal.pone.0118093

Bonetto, E., Troïan, J., Varet, F., Lo Monaco, G., & Girandola, F. (2018). Priming resistance to persuasion decreases adherence to conspiracy theories. *Social Influence*, *13*(3), 125–136. https://doi.org/10.1080/15534510.2018.1471415

Bosnjak, M., Poggio, T., Becker, K. R., Funke, F., Wachenfeld, A., & Fischer, B. (2013, May). *Online survey participation via mobile devices [Paper presentation]*. The American Association for Public Opinion Research (AAPOR) 68th Annual Conference. Boston. https://www.aapor.org/AAPOR_Main/media/AnnualMeetingProceedings/2013/Session_I-5-2-Bosnjak.pdf

Bost, P. R., Prunier, S. G., & Piper, A. J. (2010). Relations of familiarity with reasoning strategies in conspiracy beliefs. *Psychological Reports*, *107*(2), 593–602. https://doi.org/10.2466/07.09.17.PR0.107.5.593-602

Briñol, P., & Petty, R. E. (2006). Fundamental processes leading to attitude change: Implications for cancer prevention communications. *Journal of communication*, *56*, S81–S104. https://doi.org/10.1111/j.1460-2466.2006.00284.x

Briñol, P., McCaslin, M. J., & Petty, R. E. (2012). Self-generated persuasion: Effects of the target and direction of arguments. *Journal of Personality and Social Psychology, 102*(5), 925–940. https://doi.org/10.1037/a0027231

Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy mentality questionnaire. *Frontiers in Psychology*, *4*, 225. https://doi.org/10.3389/fpsyg.2013.00225

Buhr, K., & Dugas, M.J. (2002). The Intolerance of Uncertainty Scale: Psychometric properties of the English version. *Behaviour Research and Therapy, 40*(8), 931–946. https://doi.org/10.1016/S0005-7967(01)00092-4

Byford, J. (2011). *Conspiracy theories: A critical introduction*. Springer.

Callegaro, M. (2013). Paradata in web surveys. In F. Kreuter (Ed.), *Improving surveys with paradata: Analytic uses of process information* (pp. 261–276). John Wiley & Sons.

Carleton, R. N., Norton, M. P. J., & Asmundson, G. J. (2007). Fearing the unknown: A short version of the intolerance of uncertainty Scale. *Journal of Anxiety Disorders*, *21*(1), 105–117. https://doi.org/10.1016/j.janxdis.2006.03.014

Cerulus, L. (2020, April 26). 5G arsonists turn up in continental Europe. *Politico.* https://www.politico.com/news/2020/04/26/5g-mast-torchers-turn-up-in-continental-europe-210736

Chan, K., Dupuy, B., Lajka, A. (2020, April 1). Conspiracy theorists burn 5G towers claiming link to virus. *AP News.* https://apnews.com/article/health-ap-top-news-wireless-technology-international-news-virus-outbreak-4ac3679b6f39e8bd2561c1c8eeafd855

Coady, D. (2006). *Conspiracy theories: the philosophical debate.* Routledge.

Compton, J., Jackson, B., & Dimmock, J. A. (2016). Persuading others to avoid persuasion: Inoculation theory and resistant health attitudes. *Frontiers in Psychology, 7,* 122. https://doi.org/10.3389/fpsyg.2016.00122

Crocker, J., Luhtanen, R., Broadnax, S., & Blaine, B. E. (1999). Belief in U.S. government conspiracies against Blacks among Black and White college students: Powerlessness or system blame? *Personality and Social Psychology Bulletin, 25*(8), 941–953. https://doi.org/10.1177/01461672992511003

Daalder, M. (2020, April 9). Cell towers targeted as 5G conspiracy theory goes viral. *Newsroom.* https://www.newsroom.co.nz/cell-towers-targeted-as-5g-conspiracy-theory-goes-viral

Dagnall, N., Drinkwater, K., Parker, A., Denovan, A., & Parton, M. (2015). Conspiracy theory and cognitive style: A worldview. *Frontiers in psychology*, *6*, 206. https://doi.org/10.3389/fpsyg.2015.00206

Damen, T. G., Müller, B. C., van Baaren, R. B., & Dijksterhuis, A. (2015). Re-examining the agentic shift: The sense of agency influences the effectiveness of (self) persuasion. *PLOS ONE*, *10*(6), e0128635. https://doi.org/10.1371/journal.pone.0128635

Darwin, H., Neave, N., & Holmes, J. (2011). Belief in conspiracy theories. The role of paranormal belief, paranoid ideation and schizotypy. *Personality and Individual Differences, 50*(8), 1289–1293. https://doi.org/10.1016/j.paid.2011.02.027

De Leeuw, E. D. (2012). Counting and measuring online: the quality of internet surveys. *Bulletin of Sociological Methodology, 114*(1), 68–78. https://doi.org/10.1177/0759106312437290

Dieguez, S., Wagner-Egger, P., & Gauvrit, N. (2015). Nothing happens by accident, or does it? A low prior for randomness does not explain belief in conspiracy theories. *Psychological Science, 26*(11), 1762–1770. https://doi.org/10.1177/0956797615598740

Douglas, K. M., & Sutton, R. M. (2008). The hidden impact of conspiracy theories: Perceived and actual influence of theories surrounding the death of Princess Diana. *The Journal of Social Psychology*, *148*(2), 210–222. https://doi.org/10.3200/SOCP.148.2.210-222

Douglas, K. M., & Sutton, R. M. (2018). Why conspiracy theories matter: A social psychological analysis. *European Review of Social Psychology*, *29*(1), 256–298. https://doi.org/10.1080/10463283.2018.1537428

Douglas, K. M., Sutton, R. M., & Cichocka, A. (2017). The psychology of conspiracy theories. *Current Directions in Psychological Science, 26*(6), 538–542. https://doi.org/10.1177/0963721417718261

Douglas, K. M., Sutton, R. M., Callan, M. J., Dawtry, R. J., & Harvey, A. J. (2016). Someone is pulling the strings: Hypersensitive agency detection and belief in conspiracy theories. *Thinking & Reasoning, 22*(1), 57–77. https://doi.org/10.1080/13546783.2015.1051586

Douglas, K. M., Uscinski, J. E., Sutton, R. M., Cichocka, A., Nefes, T., Ang, C. S., & Deravi, F. (2019). Understanding conspiracy theories. *Political Psychology, 40*, 3–35. http://dx.doi.org/10.1111/pops.12568

Ellis, C. (2021). High-profile Norwegian conspiracy theorist who said COVID-19 was a hoax dies from the virus after hosting illegal house parties. *Newshub.* https://www.newshub.co.nz/home/world/2021/04/high-profile-norweigian-conspiracy-theorist-who-said-covid-19-was-a-hoax-dies-from-the-virus-after-hosting-illegal-house-parties.html

Enders, A. M., & Smallpage, S. M. (2018). On the measurement of conspiracy beliefs. *Research & Politics, 5*(1), 1–4. https://doi.org/10.1177/2053168018763596

Freeman, D., & Bentall, R. P. (2017). The concomitants of conspiracy concerns. *Social Psychiatry and Psychiatric Epidemiology, 52*(5), 595–604. https://doi.org/10.1007/s00127-017-1354-4

Freeman, D., Waite, F., Rosebrock, L., Petit, A., Causier, C., East, A., Jenner, L., Teale, A-L., Carr, L., Mulhall, S., Bold, E., & Lambe, S. (2020). Coronavirus conspiracy beliefs, mistrust, and compliance with government guidelines in England. *Psychological Medicine,* 1-13. https://doi.org/10.1017/S0033291720001890

Freeston, M. H., Rhéaume, J., Letarte, H., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences, 17*(6), 791–802. https://doi.org/10.1016/0191-8869(94)90048-5

Furnham, A. (2013). Commercial conspiracy theories: A pilot study. *Frontiers in Psychology*, *4*, 379. https://doi.org/10.3389/fpsyg.2013.00379

Gebauer, F., Raab, M. H., & Carbon, C. C. (2016). Conspiracy formation is in the detail: On the interaction of conspiratorial predispositions and semantic cues. *Applied Cognitive Psychology*, *30*(6), 917–924. https://doi.org/10.1002/acp.3279

Goertzel T. (2010). Conspiracy theories in science. *EMBO Reports*, *11*(7), 493–499. https://doi.org/10.1038/embor.2010.84

Goertzel, T. (1994). Belief in conspiracy theories. *Political Psychology, 15*(4), 731–742. https://doi.org/10.2307/3791630

Goldberg, Z. J., & Richey, S. (2020). Anti-vaccination beliefs and unrelated conspiracy theories. *World Affairs*, *183*(2), 105–124. https://doi.org/10.1177/0043820020920554

Goreis, A., & Voracek, M. (2019). A systematic review and meta-analysis of psychological research on conspiracy beliefs: Field characteristics, measurement instruments, and associations with personality traits. *Frontiers in Psychology*, *10*, 205. https://doi.org/10.3389/fpsyg.2019.00205

Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about internet questionnaires. *The American psychologist*, *59*(2), 93–104. https://doi.org/10.1037/0003-066X.59.2.93

Grebe, E., & Nattrass, N. (2012). AIDS conspiracy beliefs and unsafe sex in Cape Town. *AIDS and Behavior*, *16*(3), 761–773. https://doi.org/10.1007/s10461-011-9958-2

Greenberg, S., Brand, D., Pluta, A., Moore, D., & DeConti, K. (2018). Nudging resisters toward change: Self-persuasion interventions for reducing attitude certainty. *American Journal of Health Promotion*, *32*(4), 997–1009. https://doi.org/10.1177/0890117117715295

Greenwald, A. G., & Albert, R. D. (1968). Acceptance and recall of improvised arguments. *Journal of Personality and Social Psychology, 8*, 31–34. https://doi.org/10.1037/h0021237

Hamilton, I. S. (2020, May 7). 77 cell phone towers have been set on fire so far due to a weird coronavirus 5G conspiracy theory. *Business Insider.* https://www.businessinsider.com.au/77-phone-masts-fire-coronavirus-5g-conspiracy-theory-2020-5

Harambam, J. (2020). *Contemporary conspiracy culture: Truth and knowledge in an era of epistemic instability*. Routledge. https://doi.org/10.4324/9780429327605

Heitland, K., & Bohner, G. (2010). Reducing prejudice via cognitive dissonance: Individual differences in preference for consistency moderate the effects of counter-attitudinal advocacy. *Social Influence, 5*(3), 164–181. https://doi.org/10.1080/15534510903332261

Hornsey, M. J., Harris, E. A., & Fielding, K. S. (2018). The psychological roots of anti-vaccination attitudes: A 24-nation investigation. *Health Psychology, 37*(4), 307–315. https://doi.org/10.1037/hea0000586

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online surveys in marketing research: Pros and cons. *International Journal of Market Research, 44*(3), 361–376. https://doi.org/10.1177/147078530204400303

Imhoff, R., & Bruder, M. (2014). Speaking (un–) truth to power: Conspiracy mentality as a generalised political attitude. *European Journal of Personality*, *28*(1), 25–43. https://psycnet.apa.org/doi/10.1002/per.1930

Imhoff, R., & Lamberty, P. K. (2017). Too special to be duped: Need for uniqueness motivates conspiracy beliefs. *European Journal of Social Psychology, 47*(6), 724–734. https://doi.org/10.1002/ejsp.2265

Janis, I. L., & King, B. T. (1954). The influence of role playing on opinion change. *The Journal of Abnormal and Social Psychology, 49*(2), 211–218. https://doi.org/10.1037/h0056957

Jolley, D., & Douglas, K. M. (2014a). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PLOS ONE, 9* (2), e89177. https://doi.org/10.1371/journal.pone.0089177

Jolley, D., & Douglas, K. M. (2014b). The social consequences of conspiracism: Exposure to conspiracy theories decreases the intention to engage in politics and to reduce one's carbon footprint. *British Journal of Psychology, 105*(1), 35–56. https://doi.org/10.1111/bjop.12018

Jolley, D., & Douglas, K. M. (2017). Prevention is better than cure: Addressing anti-vaccine conspiracy theories. *Journal of Applied Social Psychology, 47*(8), 459–469. https://doi.org/10.1111/jasp.12453

Keeley, B. L. (2019). Nobody expects the Spanish inquisition! More thoughts on conspiracy theory. In D. Coady (Ed.), *Conspiracy theories: The philosophical debate* (pp. 107–113). Routledge.

Khawaja, N. G., & Yu, L. N. H. (2010). A comparison of the 27-item and 12-item intolerance of uncertainty scales. *Clinical Psychologist*, *14*(3), 97–106. https://doi.org/10.1080/13284207.2010.502542

Kronast, H. (2020, May 15). Two more Auckland cell towers set on fire amid 5G, COVID-19 conspiracies. *Newshub.* https://www.newshub.co.nz/home/new-zealand/2020/05/two-more-auckland-cell-towers-set-on-fire-amid-5g-covid-19-conspiracies.html

Landrum, A. R., & Olshansky, A. (2019). The role of conspiracy mentality in denial of science and susceptibility to viral deception about science. *Politics and the Life Sciences*, *38*(2), 193–209. https://doi.org/10.1017/pls.2019.9

Lantian, A., Muller, D., Nurra, C., & Douglas, K. M. (2016). Measuring belief in conspiracy theories: Validation of a French and English single-item scale. *International Review of Social Psychology, 29*(1),1–14. https://doi.org/10.5334/irsp.8

Leiner, D. J. (2019). Too Fast, too Straight, too Weird: Non-Reactive Indicators for Meaningless Data in Internet Surveys. *Survey Research Methods*, *13*(3), 229–248. https://doi.org/10.18148/srm/2019.v13i3.7403

Lewandowsky, S., Oberauer, K., & Gignac, G. E. (2013). NASA faked the moon landing – therefore, (climate) science is a hoax: An anatomy of the motivated rejection of science. *Psychological Science, 24*(5), 622–633. https://doi.org/10.1177/0956797612457686

Loman, J. G. B., Müller, B. C. N., Oude Groote Beverborg, A., van Baaren, R. B., & Buijzen, M. (2018a). Self-persuasion in media messages: Reducing alcohol consumption among students with open-ended questions. *Journal of Experimental Psychology: Applied, 24*(1), 81–91. https://doi.org/10.1037/xap0000162

Loman, J. G., Müller, B. C., Oude Groote Beverborg, A., van Baaren, R. B., & Buijzen, M. (2018b). Self-persuasion on Facebook increases alcohol risk perception. *Cyberpsychology, Behavior, and Social Networking*, *21*(11), 672–678. https://doi.org/10.1089/cyber.2018.0235

Lukić, P., Žeželj, I., & Stanković, B. (2019). How (ir)rational is it to believe in contradictory conspiracy theories? *Europe's Journal of Psychology*, *15*(1), 94–107. https://doi.org/10.5964/ejop.v15i1.1690

Mashuri, A., & Zaduqisti, E. (2015). The effect of intergroup threat and social identity salience on the belief in conspiracy theories over terrorism in Indonesia: Collective angst as a mediator. *International Journal of Psychological Research, 8*(1), 24–35. https://doi.org/10.21500/20112084.642

Mason, F. (2002). A poor person's cognitive mapping. In P. Knight (Ed.), *Conspiracy nation: The politics of paranoia in postwar America* (pp. 40–56). New York University Press.

Mavletova, A. (2013). Data Quality in PC and Mobile Web Surveys. *Social Science Computer Review*, *31*(6), 725–743. https://doi.org/10.1177/0894439313485201

McGuire, W. J. (1961a). The effectiveness of supportive and refutational defenses in immunizing and restoring beliefs against persuasion. *Sociometry*, 24, 184–197. https://doi.org/10.2307/2786067

McGuire, W. J. (1961b). Resistance to persuasion conferred by active and passive prior refutation of the same and alternative counterarguments. *The Journal of Abnormal and Social Psychology, 63*(2), 326–332. https://doi.org/10.1037/h0048344

McIntyre, L. J. (2004). *Need to know: Social science research methods.* McGraw Hill Education.

Melley, T. (2002). Agency, panic and the culture of conspiracy. In P. Knight (Ed.), *Conspiracy nation: The politics of paranoia in postwar America* (pp. 57–81). New York University Press.

Miller, J. M., Saunders, K. L., & Farhart, C. E. (2016). Conspiracy endorsement as motivated reasoning: The moderating roles of political knowledge and trust. *American Journal of Political Science*, *60*(4), 824–844. https://doi.org/10.1111/ajps.12234

Mills, E., Jadad, A. R., Ross, C., & Wilson, K. (2005). Systematic review of qualitative studies exploring parental beliefs and attitudes toward childhood vaccination identifies common barriers to vaccination. *Journal of Clinical Epidemiology*, *58*(11), 1081–1088. https://doi.org/10.1016/j.jclinepi.2005.09.002

Mitchell, J., Jurkowitz, M., Oliphant, B., & Shearer, E. (2020, June 29). Three months in, many Americans see exaggeration, conspiracy theories and partisanship in COVID-19 news. *Pew Research Center.* https://www.pewresearch.org/journalism/2020/06/29/three-months-in-many-americans-see-exaggeration-conspiracy-theories-and-partisanship-in-covid-19-news/

Molyneux, V. (2020, April 8). Prime Minister Jacinda Ardern says conspiracy theories linking 5G and COVID-19 are 'just not true'. *Newshub,* https://www.newshub.co.nz/home/politics/2020/04/prime-minister-jacinda-ardern-says-conspiracy-theories-linking-5g-and-covid-19-are-just-not-true.html

Molyneux, V. (2020, May 15). Telecommunications companies furious at 'senseless, dangerous' arson of cell towers. *Newshub.* https://www.newshub.co.nz/home/new-zealand/2020/05/telecommunications-companies-furious-at-senseless-dangerous-arson-of-cell-towers.html

Moulding, R., Nix-Carnell, S., Schnabel, A., Nedeljkovic, M., Burnside, E. E., Lentini, A. F., & Mehzabin, N. (2016). Better the devil you know than a world you don't? Intolerance of uncertainty and worldview explanations for belief in conspiracy theories. *Personality and Individual Differences, 98,* 345–354. https://doi.org/10.1016/j.paid.2016.04.0

Müller, B. C. N., van Someren, D. H., Gloudemans, R. T. M., van Leeuwen, M. L., & Greifeneder, R. (2017). Helping made easy: Ease of argument generation enhances intentions to help. *Social Psychology, 48*(2), 113–121. https://doi.org/10.1027/1864-9335/a000293

Müller, B. C., van Baaren, R. B., Ritter, S. M., Woud, M. L., Bergmann, H., Harakeh, Z., Engels, R. C. M. E., & Dijksterhuis, A. (2009). Tell me why… The influence of self-involvement on short term smoking behaviour. *Addictive Behaviors*, *34*(5), 427–431. https://doi.org/10.1016/j.addbeh.2008.12.016

Mussweiler, T., & Neumann, R. (2000). Sources of mental contamination: Comparing the effects of self-generated versus externally provided primes. *Journal of Experimental Social Psychology, 36*(2), 194–206. https://doi.org/10.1006/jesp.1999.1415

Nardi, P. M. (2006). *Doing survey research: A guide to quantitative methods.* Pearson Education.

Nazar, S., & Pieters, T. (2021). Plandemic Revisited: A product of planned disinformation amplifying the COVID-19 "infodemic". *Frontiers in Public Health, 9.* 954. https://doi.org/10.3389/fpubh.2021.649930

Newheiser, A.-K., Farias, M., & Tausch, N. (2011). The functional nature of conspiracy beliefs: Examining the underpinnings of belief in the Da Vinci Code conspiracy. *Personality and Individual Differences, 51*(8), 1007–1011. https://doi.org/10.1016/j.paid.2011.08.011

Oliver, J. E., & Wood, T. (2014). Medical conspiracy theories and health behaviors in the United States. *JAMA Internal Medicine*, *174*(5), 817–818. https://doi.org/10.1001/jamainternmed.2014.190

Orosz, G., Krekó, P., Paskuj, B., Tóth-Király, I., Bőthe, B., & Roland-Lévy, C. (2016). Changing conspiracy beliefs through rationality and ridiculing. *Frontiers in Psychology, 7,* 1525. https://doi.org/10.3389/fpsyg.2016.01525

Parsons, S., Simmons, W., Shinhoster, F., & Kilburn, J. (1999). A test of the grapevine: An empirical examination of conspiracy theories among African Americans. *Sociological Spectrum, 19*(2), 201–222. https://doi.org/10.1080/027321799280235

Privitera, A. (2014). *Research methods for the behavioral sciences.* SAGE Publications.

Salvador Casara, B. G., Suitner, C., & Bettinsoli, M. L. (2019). Viral suspicions: Vaccine hesitancy in the Web 2.0. *Journal of Experimental Psychology: Applied, 25*(3), 354–371. https://doi.org/10.1037/xap0000211

Schlosser, S., & Mays, A. (2018). Mobile and dirty: Does using mobile devices affect the data quality and the response process of online surveys? *Social Science Computer Review, 36*(2), 212–230. https://doi.org/10.1177/0894439317698437

Simmons, W. P., & Parsons, S. (2005). Beliefs in conspiracy theories among African Americans: A comparison of elites and masses. *Social Science Quarterly*, *86*(3), 582–598. https://doi.org/10.1111/j.0038-4941.2005.00319.x

Stavrositu, C., & Kim, J. (2018). Self-persuasion through mobile applications: Exploring different routes to health behavioral change. *Cyberpsychology, Behavior, and Social Networking, 21*(8), 516–522. https://doi.org/10.1089/cyber.2018.0079

Stojanov, A. (2015). Reducing conspiracy theory beliefs. *Psihologija*, *48*(3), 251–266. https://doi.org/10.2298/PSI1503251S

Stojanov, A., & Halberstadt, J. (2019). The Conspiracy Mentality Scale: Distinguishing between irrational and rational suspicion. *Social Psychology, 50*(4), 215–232. https://doi.org/10.1027/1864-9335/a000381

Sullivan, D., Landau, M. J., & Rothschild, Z. K. (2010). An existential function of enemyship: Evidence that people attribute influence to personal and political enemies to compensate for threats to control. *Journal of Personality and Social Psychology, 98*(3), 434–449. https://doi.org/10.1037/a0017457

Sunstein, C. R. (2014). *Conspiracy theories and other dangerous ideas*. Simon and Schuster.

Sunstein, C. R., & Vermeule, C. A. (2009). Conspiracy theories: Causes and cures. *The Journal of Political Philosophy, 17*(2), 202–227. https://doi.org/10.1111/j.1467-9760.2008.00325.x

Sutton, R. M., & Douglas, K. M. (2014). Examining the monological nature of conspiracy theories. In J.-W. van Prooijen, & P. A. M. van Lange (Eds.), *Power, Politics, and Paranoia: Why People Are Suspicious Their Lead*, (pp. 254–272). Cambridge University Press.

Swami, V. (2012). Social psychological origins of conspiracy theories: The case of the Jewish conspiracy theory in Malaysia. *Frontiers in Psychology*, *3*, 280. https://doi.org/10.3389/fpsyg.2012.00280

Swami, V., Coles, R., Stieger, S., Pietschnig, J., Furnham, A., Rehim, S. and Voracek, M. (2011). Conspiracist ideation in Britain and Austria: Evidence of a monological belief system and associations between individual psychological differences and real-world and fictitious conspiracy theories. *British Journal of Psychology, 102*(3), 443–463. https://doi.org/10.1111/j.2044-8295.2010.02004.x

Swami, V., Voracek, M., Stieger, S., Tran, U. S., & Furnham, A. (2014). Analytic thinking reduces belief in conspiracy theories. *Cognition, 133*(3), 572–585. https://doi.org/10.1016/j.cognition.2014.08.006

Tuters, M., Knight, P. (2020, June 11). Four experts investigate how the 5G coronavirus conspiracy theory began: A toxic cocktail of misinformation. *The Conversation.* https://theconversation.com/four-experts-investigate-how-the-5g-coronavirus-conspiracy-theory-began-139137

Uscinski, J. E. (2018). *Conspiracy theories and the people who believe them*. Oxford University Press.

van der Linden, S. (2015). The conspiracy-effect: Exposure to conspiracy theories (about global warming) decreases pro-social behavior and science acceptance. *Personality and Individual Differences, 87,* 171–173. https://doi.org/10.1016/j.paid.2015.07.045

van der Tempel, J., & Alcock, J. E. (2015). Relationships between conspiracy mentality, hyperactive agency detection, and schizotypy: Supernatural forces at work? *Personality and Individual Differences, 82,* 136–141. https://doi.org/10.1016/j.paid.2015.03.010

van der Wal, R. C., Sutton, R. M., Lange, J., & Braga, J. P. N. (2018). Suspicious binds: Conspiracy thinking and tenuous perceptions of causal connections between co-occurring and spuriously correlated events. *European Journal of Social Psychology, 48*(7), 970–989. https://doi.org/10.1002/ejsp.2507

van Prooijen, J. W., & Acker, M. (2015). The influence of control on belief in conspiracy theories: Conceptual and applied extensions. *Applied Cognitive Psychology*, *29*(5), 753–761. https://doi.org/10.1002/acp.3161

van Prooijen, J. W., & Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory Studies, 10*(3), 323–333. https://doi.org/10.1177/1750698017701615

van Prooijen, J. W., Douglas, K. M., & De Inocencio, C. (2018). Connecting the dots: Illusory pattern perception predicts belief in conspiracies and the supernatural. *European Journal of Social Psychology, 48*(3), 320–335. https://doi.org/10.1002/ejsp.2331

van Prooijen, J.-W. (2017). Why education predicts decreased belief in conspiracy theories. *Applied Cognitive Psychology, 31*(1), 50–58. https://doi.org/10.1002/acp.3301

Warner, B. R., & Neville-Shepard, R. (2014). Echoes of a conspiracy: Birthers, truthers, and the cultivation of extremism. *Communication Quarterly, 62*, 1–17. https://doi.org/10.1080/01463373.2013.822407

West, H. G., & Sanders, T. (2003). *Transparency and conspiracy: Ethnographies of suspicion in the New World Order*. Duke University Press.

Westergaard, R. P., Beach, M. C., Saha, S., & Jacobs, E. A. (2014). Racial/ethnic differences in trust in health care: HIV conspiracy beliefs and vaccine research participation. *Journal of General Internal Medicine*, *29*(1), 140–146. https://doi.org/10.1007/s11606-013-2554-6

Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science, 322,* 115–117. https://doi.org/10.1126/science.1159845

Wood, M. J. (2016). Some dare call it conspiracy: Labeling something a conspiracy theory does not reduce belief in it. *Political Psychology, 37*(5), 695–705. https://doi.org/10.1111/pops.12285

Wood, M. J. (2017). Conspiracy suspicions as a proxy for beliefs in conspiracy theories: Implications for theory and measurement. *British Journal of Psychology, 108*(3), 507–527. https://doi.org/10.1111/bjop.12231

Wood, M. J., Douglas, K. M., & Sutton, R. M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science, 3*(6), 767–773. https://doi.org/10.1177/1948550611434786

Wu, D., Yang, T., Hall, D. L., Jiao, D., Huang, L., & Jian, C. COVID-19 uncertainty and sleep: the roles of perceived stress and intolerance of uncertainty during the early stage of the COVID-19 outbreak. *BMC Psychiatry*, 21**,** 1–11. https://doi.org/10.1186/s12888-021-03310-2

Appendices

Appendix A: Ethics approval

Auckland University of Technology Ethics Committee (AUTEC)
Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz

16 September 2020
Jay Wood
Faculty of Culture and Society

Dear Jay

Re Ethics Application: **20/274 Testing the Influence of Self-Generated Persuasion on Conspiratorial Thinking among New Zealand Adults**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 15 September 2023.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)
The AUTEC Secretariat
Auckland University of Technology Ethics Committee Cc: rdy6319@autuni.ac.nz

Appendix B: Tools

a) *Recruitment Flyer*

Participant Information Sheet

Date Information Sheet Produced:

30 July 2020

An Invitation

Kia Ora, my name is Sina Mon. You are invited to participate in a research study which explores conspiratorial thinking. Your participation in this study is entirely voluntary. You are free to withdraw at any time, with no negative consequences to you but your help would be greatly appreciated.

What is the purpose of this research?
This research study has been designed to examine engagement in an argument generation task and our conspiratorial thinking. This study aims to recruit participants who are 16 years or older, fluent in English and based in New Zealand only. The results from this research study will contribute to the achievement of my Master of Arts Psychology degree at Auckland University of Technology. The findings of this research may also be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?
You and other potential participants have been recruited via AUT blackboard announcements, paper flyers or through social media websites. You are invited to participate in this research study because you have responded to the recruitment ad, indicating that you are at least 16 years old, fluent in English and based in New Zealand.

How do I agree to participate in this research?
To participate, you must first sign the consent form. Press NEXT at the bottom of this page to proceed to the consent form page. Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?
Your participation in this study will require you to generate your own arguments about a specified topic, answer a questionnaire related to conspiratorial thinking and answer basic demographic questions. You will be required to create your own nickname. This nickname will be for the purpose of matching your responses from the first questionnaire to your responses in the follow-up questionnaire. If you decide to participate in the follow-up questionnaire, you will need to provide your email address and after two weeks, you will be emailed a link to complete the follow-up questionnaire.

What are the discomforts and risks?
I do not anticipate you will experience any significant discomfort or risk. However, if you do experience discomfort caused by any of our questions, you may move on to the next question. All the information you provide us will be treated as confidential. No personal information you provide us can be used to identify you in the final research report.

What are the benefits?

You will benefit in gaining the experience of being a research participant. You will have the opportunity to express your valued opinions and have a chance to engage in a topic that interests you. In addition, you will have the opportunity to enter in a small prize draw consisting of four $100 and eight $50 gift certificates. As the researcher, I will be using the research results to write my Thesis. The Thesis which will contribute towards the achievement of my Master of Arts qualification.

How will my privacy be protected?

All the information you provide to us will be treated as confidential and no identifiable information will be presented in the final Thesis. Your data will be kept in a secure location. Only the researchers listed on this sheet will have access to your data. The information you give us will be kept permanently and may be used for future research related to the psychology of beliefs. It may also be given to other researchers, but they will not be able to identify you from the data we give them.

What are the costs of participating in this research?

There are no costs for your participation other than your personal time for completing the online questionnaires. The fist questionnaire will take approximately 30 minutes and the follow-up questionnaire will take approximately 10 minutes.

What opportunity do I have to consider this invitation?

I appreciate you taking the time to read this information sheet and considering your participation. You will have approximately one month to consider your participation.

Will I receive feedback on the results of this research?

If you would like to view a summary of the research results, visit *https://tinyurl.com/conspiracythinkresults* The results will be made available once data analysis is complete. Please be aware there may be a delay of several months from the time you complete the questionnaires until the data is analysed. Thank you in advance for your patience.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisors: Dr Jay Wood, *jay.wood@aut.ac.nz*, 09 921 9999 ext. 8506 or Dr Erik Landhuis, *erik.landhuis@aut.ac.nz, 09* 921 9999 ext. 6645.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz*, (+649) 921 9999 ext. 6038.

Whom do I contact for further information about this research?

Please keep this Participant Information Sheet for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Sina Mon, *rdy6319@aut.ac.nz*

Project Supervisor Contact Details:

Dr Jay Wood, *jay.wood@aut.ac.nz*
Dr Erik Landhuis, *erik.landhuis@aut.ac.nz*

Approved by the Auckland University of Technology Ethics Committee on *16/09/2020*, **AUTEC Reference number** *20/274*

c) Consent Form

Consent Form

*Project Supervisors: **Dr Jay Wood and Dr Erik Landhuis***

*Researcher: **Sina Mon***

- I have read and understood the information provided about this research project in the Information Sheet dated 30 July 2020
- I have had an opportunity to ask questions and to have them answered.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I understand my data will be kept indefinitely and may be given to other researchers for the purposes of secondary analysis or verification of study findings, but they will not be able to identify me from the data.
- I understand I can view a summary of the research findings by accessing the webpage link provided in the Participant Information Sheet.
- I agree to take part in this research.

Participant's signature: ....

Participant's name: ....

Participant's email address: ....

Date:

Approved by the Auckland University of Technology Ethics Committee on 16/09/2020 AUTEC Reference number 20/274

d) Conspiracy Mentality Questionnaire (CMQ) Scale items

Item 1. I think that many very important things happen in the world, which the public is never informed about

Item 2. I think that politicians usually do not tell us the true motives for their decisions

Item 3. I think that government agencies closely monitor all citizens

Item 4. I think that events which specifically seem to lack a connection are often the result of secret activities

Item 5. I think that there are secret organisations that greatly influence political decisions

e) Flexible Inventory of Conspiracy Suspicion (FICS) Scale items

Item 1. The real truth about *COVID-19* is being kept from the public

Item 2. There is something very suspicious about the things the public has been told about *COVID-19*

Item 3. People need to wake up and start asking questions about *COVID-19*

Item 4. Those in power are going to a great deal of trouble to keep *COVID-19* from being thoroughly investigated

Item 5. If most people knew the real truth about *COVID-19,* there would be riots in the streets

Item 6. It's very suspicious that so few people in the media question whether we're being told the truth about *COVID-19*

Item 7. When it comes to *Covid-19,* most people are asleep and need to wake up.

Item 8. Those in power are very nervous that the public will realise the truth about *COVID-19*

Item 9. Legitimate questions about *COVID-19* are being suppressed by the government, the media, and academia

Item 10. The facts about *COVID-19* simply don't match what we've been told by 'experts' and the mainstream media

Item 11. We need a new, unbiased investigation to uncover the real truth about *COVID-19*

Item 12. Anyone who's been paying attention knows that we're being lied to about *COVID-19,* but most people are simply brainwashed.

Item 13. Reporters, scientists, and government officials are involved in a conspiracy to cover up important information about *COVID-19*

Item 14. We may never know the full truth about *COVID-19,* but it's clear that the mainstream story is a complete lie

Item 15. If the truth about *COVID-19* came out, it would hurt the interests of some extremely powerful people

Item 16. The mainstream media could never have an honest discussion about *COVID-19* – there are too many powerful interests at work

Item 17. An impartial, independent investigation of *COVID-19* would show once and for all that we've been lied to on a massive scale

f) *Intolerance for Uncertainty Scale (IUS-12) items*

Item 1. Unforeseen events upset me greatly

Item 2. It frustrates me not having all the information I need

Item 3. Uncertainty keeps me from living a full life

Item 4. One should always look ahead so as to avoid surprises

Item 5. A small unforeseen event can spoil everything, even with the best of planning

Item 6. When it's time to act, uncertainty paralyses me

Item 7. When I am uncertain I can't function very well

Item 8. I always want to know what the future has in store for me

Item 9. I can't stand being taken by surprise

Item 10. The smallest doubt can stop me from acting

Item 11. I should be able to organize everything in advance

Item 12. I must get away from all uncertain situations

g) *Demographic Questionnaire*

1. What is your gender?
   ☐ Female ☐ Male ☐ Non-binary ☐ Prefer not to say

2. Which of the following ethnicity do you most identify with?
   ☐ Pākehā/NZ European ☐ Māori ☐ Pasifika ☐ Asian
   ☐ Middle Eastern ☐ Latin American ☐ African ☐ Other
   (Please specify): _____

3. What is your highest education level? (if currently enrolled, use highest obtained)
   ☐ Secondary School NCEA
   ☐ Certificate
   ☐ Diploma
   ☐ Bachelor's Degree
   ☐ Diploma/Certificate
   ☐ Master's Degree
   ☐ Doctorate
   ☐ Other (Please specify) _____

4. What is your age?
   [type here…….]

Participant Debrief

Thank you for your participation in our study about *Conspiratorial Thinking*, it is greatly appreciated! We would like to debrief you about our research study, the methodology and how your participation has contributed to our study.

The overall aim of this study was to explore our conspiratorial thinking tendency. You were required to first complete an argument generation task where you generated your own reasons about a specified topic. Following this, you answered questions related to your general conspiratorial thinking tendency, questions related to conspiratorial suspicion towards COVID-19, a question which measured behavioural intention, two questions which measured topic importance and lastly, some basic demographic questions.

This research study wanted to test whether engagement in self-persuasion task (pro or anti argument generation) would influence our conspiratorial thinking tendency. This means that in this research study, we randomly assigned all participants to one of four different groups. Each group was shown a slightly different Task Instruction.

- ▪ If you were in the *pro-conspiracy group*, your task instruction would have stated: "We'd like you to write arguments IN FAVOUR of conspiracy theories/conspiracy information only. Please list some reasons below for why you should not ignore conspiracy theories or conspiracy information"

- ▪ ·If you were in the *anti-conspiracy group*, your task instruction would have stated: "We'd like you write arguments AGAINST conspiracy theories/conspiracy information only. Please list some reasons below for why you should ignore conspiracy theories or conspiracy information"

- ▪ ·If you were in the *positive control group*, your task instruction would have stated: "We'd like you to write arguments IN FAVOUR of this initiative only. Please list some reasons below for why the 'Greener Cities' initiative is a good idea including its potential benefits"

- ▪ ·If you were in the *negative control group*, your task instruction would have stated: "We'd like you to write arguments AGAINST this initiative only. Please list some reasons below for why the 'Greener Cities' initiative is not a good idea including its potential disadvantages"

Both the pro-conspiracy and anti-conspiracy groups read a blurb about conspiracy theories whereas both the control groups read a blurb about a 'Greener Cities' initiative. Aside from these differences in your task instruction, any other questions asked were the same for all participants.

This research study also wanted to examine whether your conspiratorial thinking tendency after engagement in our self-persuasion task would change over time. Specifically, after a period of two weeks. Therefore, you were invited to complete a follow-up questionnaire which consisted of the same conspiratorial thinking and conspiratorial suspicion towards COVID-19 questions from the first questionnaire.

I hope you enjoyed your time engaging in our study as a research participant.
If you would like to view the results of this study, visit **https://tinyurl.com/conspiracythinkresults**

Should you have any concerns regarding the nature of this project, please notify the Project Supervisors:
Dr Jay Wood. Email: jay.wood@aut.ac.nz OR Dr Erik Landhuis. Email: erik.landhuis@aut.ac.nz
Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, ethics@aut.ac.nz, (+649) 921 9999 ext. 6038.

Appendix C: Participant Demographic Characteristics

Table 6

Demographic Characteristics of Participants

Characteristic	*n*	*%*
Age (years)		
M (SD)	33.87 (12.36)	
Range	16 – 71	
Gender		
Male	116	25.5
Female	304	66.8
Non-binary	10	2.2
Prefer not to say	5	1.1
Did not report	17	3.8
Ethnicity		
Māori	33	7.3
Pākehā/ NZ European	305	67.5
Pasifika	9	2
Asian	36	8
Latin American	1	.2
African	5	1.2
Other	45	10
Did not report	18	4.0
Education		
Secondary School	91	20.1
Certificate	44	9.7
Diploma	60	13.2
Bachelor's Degree	129	28.5
Postgraduate Diploma / Certificate	53	11.6
Master	34	7.5
Doctorate	16	3.5
Other	5	1.1
Did not report	20	4.4

Note. N = 452, *M* = Mean, *SD* = Standard Deviation, *%* = percentage of participants