



To believe or Not to believe: A study on the impact of need for uniqueness on conspiracy theory belief, health risk-perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic.

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Abstract

This study aims to test a causal relationship of the effect of the need for uniqueness on the tendency to believe in a conspiracy theory, health risk perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic.

The study explores the tendency to believe in conspiracy theories and the need for uniqueness as a social motive. As higher need for uniqueness is often associated with the tendency to conform less to societal norms and majorities, we have hypothesized that higher need for uniqueness leads to lower intention to adhere to health guidelines for an individual's health, lower concern of health risks to others, lower conformity, and lower concern for negative consequences. We have also hypothesized that higher need for uniqueness leads to higher conspiracy theory belief, higher impact of conspiracy belief on risk perceptions, and higher vaccine hesitancy than lower need for uniqueness.

Despite most results not being significant, we discovered that participants with a higher need for uniqueness showed higher concern about the negative consequences of not complying with pandemic guidelines. However, belief in different conspiracy theories did not significantly differ between high and low need for uniqueness, except for belief in the theory "COVID-19 as a manmade bioweapon". These results challenge our hypotheses and emphasize the need for different measures related to the need for uniqueness. Despite limitations, the findings of this study may assist in promoting preventive behaviors during global health crises.

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Keywords: Need for uniqueness, Conspiracy theories, Health risk perceptions, COVID-19 pandemic, Social motives, Negative consequences, Global health crises

Resumo

Este estudo tem como objetivo testar uma relação causal do efeito da necessidade de singularidade na tendência de acreditar em teorias da conspiração, percepções de risco para a saúde e intenção de aderir às diretrizes de saúde durante a pandemia de COVID-19.

O estudo explora a tendência de acreditar em teorias da conspiração e a necessidade de singularidade como um motivo social. Como uma maior necessidade de singularidade está frequentemente associada à tendência de conformar-se menos às normas e maiorias sociais, hipotetizamos que uma maior necessidade de singularidade leva a uma menor intenção de aderir às diretrizes de saúde para a própria saúde de um indivíduo, menor preocupação com os riscos de saúde para os outros, menor conformidade, e menor preocupação com as consequências negativas. Também hipotetizamos que uma maior necessidade de singularidade leva a uma maior crença em teorias da conspiração, maior impacto da crença em teorias da conspiração nas percepções de risco, e maior hesitação em relação às vacinas em comparação com uma menor necessidade de singularidade.

Apesar da maioria dos resultados não serem significativos, descobrimos que os participantes com uma maior necessidade de singularidade demonstraram uma maior preocupação com as consequências negativas de não cumprir as diretrizes da pandemia. Esses resultados desafiam nossas hipóteses e enfatizam a necessidade de medidas diferentes relacionadas à necessidade de singularidade. Apesar das limitações, os achados deste estudo podem auxiliar na promoção de comportamentos preventivos durante crises globais de saúde.

Título: Acreditar ou Não Acreditar: Um estudo sobre o impacto da necessidade de singularidade na crença em teorias da conspiração, percepções de risco à saúde e intenção de aderir às orientações de saúde durante a pandemia de COVID-19

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Palavras-chave: Necessidade de singularidade, Teorias da conspiração, Percepções de risco para a saúde, Pandemia de COVID-19, Motivos sociais, Consequências negativas, Crises de saúde globais.

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List of Abbreviations

WHO – World Health Organization

US – United States

NfU – Need for Uniqueness

SANU – Self-Attributed Need for Uniqueness

1. Study introduction and objective

1.1. Introduction

The coronavirus disease 19 pandemic (COVID-19) that challenged the world as of late 2019 showed the impact of global threats often unfamiliar to society and how to deal with them. Throughout the pandemic, vast amounts of misinformation surrounding COVID-19 spread globally almost as rapidly as the virus itself, with the sudden rise of related conspiracy theories taking the spotlight (Hughes et al., 2022).

As soon as February 2020, the Director General of the World Health Organization (WHO), Dr. Tedros Adhanom Ghebreyesus issued a somber note, stating that the world is “*not just fighting an epidemic; we’re fighting an infodemic. Fake news spreads faster and more easily than the virus, and is just as dangerous.*” (Munich Security Conference, 2020), (Imhoff & Lamberty, 2020). According to a survey conducted in the early pandemic stages of mid-March in the United States (US), 42% of US-Americans were exposed to some form of information about the COVID-19 virus that did not seem plausible at all (Imhoff & Lamberty, 2020). As of March 2023, the WHO has reported 761,402,282 confirmed cases of COVID-19, and 6,887,000 deaths across 229 countries and territories globally (WHO Coronavirus (COVID-19) Dashboard, n.d.), (Countries Where Coronavirus Has Spread - Worldometer, n.d.). To halt the spread of the virus, governments and health authorities around the world struggled in a race against time to promote pandemic-driven health guidelines and behaviors to curb the virus (Hughes et al., 2022). However, it was widely observed that such guidelines and behaviors were not extensively respected (Hughes et al., 2022).

Historically speaking, different studies have shown that following grim events such as natural disasters, terrorist attacks, and in this case, a global pandemic, individuals often have the tendency to not conform to official information, rather relying on conspiracy theories instead (Lantian et al., 2017). During events of global uncertainty, negative emotions of mistrust, fear, anxiety, powerlessness, a lacking sense of knowledge and control constitute the psychological factors that strongly influence conspiracy theory belief (Van Prooijen & Douglas, 2018). In such, the manner with which individuals adhere to health guidelines and engage in pandemic compliant behaviors like handwashing, social distancing, mask wearing, and in preventive behaviors like testing and taking the COVID-19 vaccine, greatly varied (Hughes et al., 2022).

Indeed, the belief in conspiracy theories can be described as accepting unproven or disproven ideas that suggest secret plots or schemes by powerful actors with sinister objectives (Van Prooijen & Douglas, 2018). Over the years, psychologists have better identified the common personality traits of those who are more likely to believe in conspiracy theories, which includes *need for uniqueness*, mistrust, low agreeability, narcissism, low openness to experiences, and Machiavellianism (Lantian et al., 2017). Further research has shown that the propensity to believe in conspiracy theories is often linked with the personal need of having a sense of power or regaining control, and a strong desire for uniqueness (Lantian et al., 2017).

Furthermore, as observed in correlational and experimental studies, those who endorse conspiracy theory beliefs also tend to have a heightened *need for uniqueness* (Imhoff & Lamberty, 2017), (Imhoff & Lamberty, 2020). Indeed, the endorsement of conspiracy theories is strongly associated with the social motives of people, such as the need to maintain a positive self-image and to feel unique in relation to others, often associated with an extreme desire for internal and external validation (Douglas et al., 2019), which will be further explored in this study.

1.2. Relevance and importance of the present study

New studies have shown that COVID-19 conspiracy theories have harmful effects on individuals' willingness to follow government guidelines, recommendations, and abide by restrictions (Douglas, 2021). A study conducted by Romer and Jamieson (2020) in the US observed that those who endorsed COVID-19 conspiracy theories were less likely to view the pandemic as a real threat, and thus be less likely to engage in measures such as wearing masks, social distancing, and especially getting vaccinated if a vaccine came to exist (Douglas, 2021). Similarly, a study conducted by Biddlestone, Green, and Douglas (2020) suggested that those who adopt a more individualistic cultural orientation were less likely to engage in preventive measures and in turn believe in conspiracy theories instead, as opposed to those with a more collectivistic approach (Douglas, 2021). Those who followed a more collectivistic approach were more likely to engage in preventive measures, following a common behavior of "*we are in this together*" (Douglas, 2021, p. 272), an important solution during a global pandemic to counter susceptibility to conspiracy beliefs and maximize protection against the virus (Douglas, 2021).

Along similar lines, Hughes et al. (2022) argue that different COVID-19 conspiracy theories result in different responses and behaviors. Indeed, those who believed in conspiracy theories that label COVID-19 a hoax were less likely to adopt measures like handwashing, mask wearing, and social distancing (Hughes et al., 2022). Yet, those who subscribed to the idea that COVID-19 was purposely or even accidentally created to harm society in a “*new world order*” (Imhoff & Lamberty, 2020, p. 1111) were more likely to engage in hoarding behaviors like stockpiling supplies (Hughes et al., 2022), (Imhoff & Lamberty, 2020). In addition, these individuals were less likely to underestimate the severity of the COVID-19 virus, as they viewed it as an assault by authorities against the population (Imhoff & Lamberty, 2020). Nonetheless, given that conspiracy theory believers largely uphold a self-centered approach such as prioritizing self-protection or believing they have privileged information, their belief in conspiracy theories may lead to a reduced awareness and consideration of the risks faced by others (Hughes et al., 2022).

Indeed, by exploring the causal relationship of the need for uniqueness, a personality trait that projects the desire to reasonably stand out from others (Lantian et al., 2017), on the tendency to believe in a conspiracy theory, health risk perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic, this study aims to contribute with important implications for public health interventions aimed at promoting compliance with COVID-19 health guidelines, other health-related behaviors for potential future pandemics, and battling the spread of misinformation that rocked the world to its core.

1.3. Objective of the present study

The objective of this study is to test a causal relationship of the effect of the need for uniqueness on the tendency to believe in a conspiracy theory, health risk perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic. This study treats the need for uniqueness as a state, which can be more salient or less salient, rather than as a fixed trait.

2. Literature review

2.1. The basics of conspiracy theories

To better explore the topic of conspiracy theories, it is important to first acknowledge what constitutes a conspiracy theory and what does not. According to previous studies and for the purposes of the present study, conspiracies are characterized as secret plots by powerful actors with sinister objectives (Douglas et al., 2019). Conspiracy theory belief is the acceptance of unproven or disproven ideas, such as one specific conspiracy theory or an array of them, that suggests secret plots or schemes by powerful actors or groups of actors with perverse objectives (Van Prooijen & Douglas, 2018), (Douglas et al., 2019). According to Douglas et al. (2019, p. 4), these actors often “*attempt to usurp political or economic power, violate rights, infringe upon established agreements, withhold vital secrets, or alter bedrock institutions. This definition goes beyond simple criminal conspiracies, such as conspiring to rob a corner shop.*” (Douglas et al., 2019, p. 4). Understanding the complexities and nuances of conspiracy theories is crucial to properly analyze their impact on society, especially on the COVID-19 pandemic setting (Van Prooijen & Douglas, 2018), (Douglas et al., 2019), (Douglas, 2021).

In such, a conceptual tendency towards *conspiracy thinking* or a *conspiracy mindset* has been proposed over the years (Van Prooijen & Douglas, 2018), (Douglas et al., 2019), (Douglas, 2021). The concept addresses the notion that individuals who believe in one conspiracy theory are much more likely to endorse others, even if they are unrelated (Douglas et al., 2019). This implies an inherent inclination amongst certain individuals to favor conspiracy theories, largely due to “*a bias against powerful disliked groups and official accounts*” (Douglas et al., 2019, p. 5).

2.2. The four basic principles of conspiracy theory belief

In a study by Van Prooijen & Douglas (2018), conspiracy theories are characterized as being “*consequential as they have a real impact on people's health, relationships, and safety; they are universal in that belief in them is widespread across times, cultures, and social settings; they are emotional given that negative emotions and not rational deliberations cause conspiracy beliefs; and they are social as conspiracy beliefs are closely associated with*

psychological motivations underlying intergroup conflict.” (Van Prooijen & Douglas, 2018, p. 897). To better understand the notions presented, their study proposes four different basic principles (Van Prooijen & Douglas, 2018).

One of such principles endorses the notion that *conspiracy beliefs are consequential*, meaning that even when conspiracy theories may have a low probability of being true, they can still have a significant impact on important aspects of life such as health, safety, and interpersonal relationships (Van Prooijen & Douglas, 2018). Beliefs shape individuals’ behaviors, and even if those beliefs are amiss, they can still result in serious real-life consequences. An example outlined in the study is a hypothetical scenario where someone believes that vaccines cause autism, and thus, they would not want to vaccinate themselves or their children (Van Prooijen & Douglas, 2018). While there is no scientific evidence supporting this belief, many people still believe it due to the notion that the pharmaceutical industry is hiding the truth, resulting in individuals avoiding important vaccines, which can have serious health consequences (Van Prooijen & Douglas, 2018).

According to Van Prooijen & Douglas (2018), the second basic principle introduced is that *conspiracy beliefs are universal*. Indeed, everyone worldwide can be impacted by and believe in conspiracy theories, as depending on the conditions present, all individuals can be equally susceptible to conspiracy theory belief. Historically, conspiracy theories have long been present throughout the centuries (Van Prooijen & Douglas, 2018). In the study, Van Prooijen & Douglas (2018) emphasize that even “(...) wars were characterized by excessive and mutual conspiracy theories between enemy groups (Pipes, 1997). In Medieval times, conspiracy theories led to major tragedies including the killing of Jews (who were for instance accused of conspiring to poison drinking wells, as a means of explaining disease epidemics) or witch hunts (i.e., young women who were accused of conspiring with the Devil and therefore burnt alive).” (Van Prooijen & Douglas, 2018, p. 900). Conspiracy theories are also widely prevalent across different social settings, such as against governmental institutions, against minority and ethnic groups, and at attempting to spark violent plots that could result in anarchy and revolution (Van Prooijen & Douglas, 2018). Further present within micro-level settings, conspiracy theory beliefs can be found within organizations, where managers are accused of endorsing corrupt goals such as having a hidden agenda to solidify their own power position (Van Prooijen & Douglas, 2018).

In their study, Van Prooijen & Douglas (2018) introduce the third basic principle, suggesting that *conspiracy beliefs are emotional*. Precisely, this is because negative emotional experiences increase the desire to make sense of things, especially regarding threats, therefore, this increases the likelihood of alluding threatening events to conspiracies theories (Van Prooijen & Douglas, 2018). This is seen particularly in times of crisis events such as global pandemics (Van Prooijen & Douglas, 2018). The negative emotions that lead to belief in conspiracy theories include powerlessness, anxiety, uncertainty, and lacking sense of control, all of which constitute the psychological factors that influence conspiracy theory belief (Van Prooijen & Douglas, 2018). Overall, Van Prooijen & Douglas (2018) suggest that, based upon existing evidence, conspiracy theory belief is largely associated with negative feelings and emotions, whereas “*cold, non-emotional states*” (Van Prooijen & Douglas, 2018, p. 902) are largely linked to analytic and cognitive thought processes, which in turn minimize conspiracy theory belief (Van Prooijen & Douglas, 2018). Indeed, it has also often been suggested that higher levels of education lead to lower conspiracy theory belief due to more developed cognitive and analytical capabilities, as well as higher rational skepticism (Van Prooijen & Douglas, 2018).

Finally, the fourth basic principle introduced argues that *conspiracy beliefs are social* (Van Prooijen & Douglas, 2018). Surely, conspiracy theory beliefs stem from intergroup conflicts and involve hostile beliefs planning to harm a mass collective (Van Prooijen & Douglas, 2018). It is suggested that the social dimension of conspiracy theory belief is characterized by two factors: a strong identification with an individual’s own group (referred to as “ingroup”) and a perceived sense of threat from an external group (known as “outgroup”) (Van Prooijen & Douglas, 2018). Precisely, individuals who strongly associate with a particular group are more likely to support conspiracy theories if they also perceive that their group is being threatened by an outside force (Van Prooijen & Douglas, 2018). Furthermore, studies have also suggested that the stronger the ingroup identity, the stronger the belief in conspiracy theories, yet only when there is a clear sense of an outgroup threat (Van Prooijen & Douglas, 2018).

2.3. Why do individuals believe in conspiracy theories?

Motivated reasoning and the factors that influence conspiracy theory belief

It is pivotal to understand the many factors that explain why certain individuals are more prone to believing in conspiracy theories. It has been deduced that those who believe in a specific conspiracy theory often resort to other conspiracy theories to justify why their specific theory

has not garnered approval, although, as noted by Douglas et al. (2019), even this notion suffers limitations as conspiracy theories are not mutually complimentary (Douglas et al., 2019). This means the ideas offered by one theory are often repudiated by another (Douglas et al., 2019). Along these lines, Douglas et al. (2019) further complete, “*a competing and potentially more attractive explanation is that conspiracy beliefs are only related to each other to the extent that they cohere with a higher-order belief system.*” (Douglas et al., 2019 p. 7). Consequently, according to existing studies by Douglas, Sutton, and Cichocka (2017) and mentioned by Douglas et al. (2019), conspiracy theories appear more appealing when compared to non-conspiracy reasonings because “*they promise to satisfy important social psychological motives that can be characterized as epistemic (e.g., the desire for understanding, accuracy, and subjective certainty), existential (e.g., the desire for control and security), and social (e.g., the desire to maintain a positive image of the self or group).*” (Douglas et al., 2019, p. 7).

2.4. The need for control

It is suggested that many resort to believing in conspiracy theories when there is an apparent threat to their existential needs (Douglas et al., 2019). Indeed, this is because believing in conspiracy theories allows them to reject official explanations and feel a higher sense of control, and thus, “*allow people to feel that they possess a better account.*” (Douglas et al., 2019, p. 8). In such, strengthening people's sense of control appears to reduce belief in conspiracy theories (Douglas et al., 2019). Moreover, studies have shown that conspiracy beliefs are associated with feelings of poor social adaptability, powerlessness, anxiety, and existential anxiety, further correlated with feeling estranged from political systems and feelings of personal unrest (Douglas et al., 2019). However, belief in conspiracy theories may allow people to regain some psychological benefits they have lost, such as feelings of confidence and security (Douglas et al., 2019).

2.5. Social motives and the need for a positive-self image

Social motives are also psychological factors used to explain conspiracy theory belief. The endorsement of conspiracy theories is strongly associated with the social motives of people, such as the need to maintain a positive self-image and to *feel unique* in relation to others, often associated with narcissism and the extreme desire for validation (Douglas et al., 2019). In such,

as suggested by Douglas et al. (2019), “*perhaps conspiracy theories allow people to feel that they are in possession of rare, important information that other people do not have, making them feel special and thus boosting their self-esteem*” (Douglas et al., 2019, p. 9). Individuals also desire to feel confident in their social groups, like their nationalities, religious and political associations, and when they perceive their group as neglected, disadvantaged, or under threat, they are more likely to believe in conspiracy theories in a form of collective narcissism (Douglas et al., 2019). Moreover, low-status groups are more likely to engage in conspiracy theory belief than high-status groups, particularly if they have experienced discrimination, racial discrimination, or any other form of social alienation (Douglas et al., 2019). Indeed, crisis situations further contribute to increase strong group endorsement, pushing for widespread conspiracy beliefs (Douglas et al., 2019).

2.6. Motivated reasoning

Motivated reasoning has also been widely studied in its role on conspiracy theory belief, as research has shown that individuals with different ideologies interpret the same knowledge differently (Douglas et al., 2019). *Motivated reasoning* occurs when individuals interpret new information in a way that does not conflict with their existing beliefs (Douglas et al., 2019). The same applies to conspiracy theories, as people filter information according to their fundamental view about the role of conspiracy theories in the real world. Indeed, motivated reasoning allows individuals to interpret information in a way that makes them feel better and reflects a form of biased reasoning, a way to feel satisfied with oneself, one’s needs, and ideas (Douglas et al., 2019). For better context, an example would be sports fans being more likely to believe that rival teams engage in dirty play rather than their own teams (Douglas et al., 2019).

2.7. Epistemic motives

Another psychological factor that attempts at explaining conspiracy theory belief are *epistemic motives*, meaning motives related to cognitive knowledge (“Definition of Epistemic,” 2023). This implies that belief in conspiracy theories may be stronger under conditions of extreme uncertainty and randomness (Douglas et al., 2019), where it is also stronger among those who often search for purpose and context, and those who believe in otherworldly phenomena

(Douglas et al., 2019). Conspiracy beliefs are also positively associated with cognitive closure, namely when there is a lack of official information, there is a need to reduce uncertainty, boredom, and especially when individuals are incapable of grasping and making sense of complex causal phenomena (Douglas et al., 2019). However, Douglas et al., (2019) also highlight that conspiracy theories may satisfy tendencies to accept cognitively unwarranted beliefs and non-clinical delusional thinking, as evidence suggests that “*conspiracy theories appear to appeal to individuals who seek accuracy and/or meaning, but perhaps lack the cognitive tools or experience problems that prevent them from being able to find accuracy and meaning via other more rational means.*” (Douglas et al., 2019, p. 8).

2.8. Risk perceptions and COVID-19

An individual’s perception to risk is primarily driven by their acceptance of risk, willingness to engage in risky activities, risk awareness, and acknowledgement of threats (Hughes et al., 2022). Studies throughout the pandemic suggest that risk perception varied greatly according to different countries and cultures, while social media has been found to be a major impacting force on spreading information about the COVID-19 virus (Hughes et al., 2022). This was observed as individuals often resorted to social media to access their risk levels and susceptance to the virus, and as further reinforced by Hughes et al. (2022), risk perceptions are complex and challenging to perceive. When groups that are at risk fail to comprehend the messages concerning potential dangers, when there is contradictory messaging, or when the source of information lacks credibility, it frequently results in a failure to take necessary precautions to protect oneself against those risks (Hughes et al., 2022). To better understand the relationship between risk perceptions and compliant behaviors in the COVID-19 setting, as well as how different categories of risk perceptions impact responses and behaviors in the pandemic, Hughes et al. (2022) have highlighted many variables that may play a pivotal role in promoting compliance. According to a recent study, although having a high level of risk perception for oneself did not necessarily translate into a willingness to get vaccinated, being aware of the risks posed to others was a significant motivating factor instead (Hughes et al., 2022).

Hughes et al. (2022) further outline a US study that showed those who perceived a higher risk of COVID-19 were more likely to engage in compliant behaviors like mask wearing, social distancing and hand washing, whereas those who perceived low risk did not adopt compliant behaviors (Hughes et al., 2022). Indeed, the concept of risk aversion explains that individuals

may act irrationally to avoid perceived risks, regardless of their actual presence or significance (Hughes et al., 2022). Such individuals may have different perceptions of risks, which can influence their behavior, for instance, some individuals may be more concerned about financial risks and may attempt to avoid lockdown measures, while others may exaggerate health risks and avoid social interactions even when not necessary (Hughes et al., 2022).

2.9. The role of need for uniqueness and its impact on conspiracy theory belief

The desire to differentiate oneself from others is defined as the *need for uniqueness*, which can be both a consistent characteristic and a temporary state influenced by observations that reveal similarities with others (Lantian et al., 2017).

Individuals with a higher need for uniqueness tend to prefer rare or distinctive commodities over those with low need for uniqueness, as they serve as indicators of their individuality (Lantian et al., 2017). Snyder and Fromkin (1980) proposed that individuals can convey their uniqueness through their beliefs (Lantian et al., 2017). Indeed, while many individuals utilize the actions of others as a guide for their own behavior and tend to conform to societal norms, such as adhering to health guidelines, there are certain individuals who do not conform to this pattern (Imhoff & Lamberty, 2020). These individuals have a high need for uniqueness and place great importance on distinguishing themselves from the masses (Imhoff & Lamberty, 2020). In such, they deliberately avoid conforming to the majority's actions or words, and as observed in both correlational and experimental studies, those who endorse conspiracy theory beliefs also tend to have a heightened need for uniqueness (Imhoff & Lamberty, 2017), (Imhoff & Lamberty, 2020).

Consequently, individuals who believe in conspiracy theories are less likely than others to conform to descriptive social norms (Imhoff & Lamberty, 2020). Assuming all factors are constant, individuals typically conform to the beliefs of the majority, viewed as the standard, nevertheless, there are situations and individuals for whom this approach is not satisfactory as it contradicts their desire for uniqueness (Imhoff & Lamberty, 2017). A high need for uniqueness, whether intrinsic or influenced by environmental factors, can prompt individuals to align less with the majority and instead support minority viewpoints that are less popular, for instance, by dangerously believing in conspiracy theories (Imhoff & Lamberty, 2017).

Additionally, individuals who experience prolonged and persistent lack of control over significant aspects of their lives such as unemployment, unfavorable financial prospects, and

interpersonal power imbalance, are more likely to endorse conspiracy theories (Imhoff & Lamberty, 2017). This perspective regards conspiracy theories as a coping mechanism for dealing with the absence of control and power (Imhoff & Lamberty, 2017). This portrayal suggests that believers in conspiracy theories are insecure and isolated individuals who struggle to comprehend a confusing world (Imhoff & Lamberty, 2017). However, many conspiracy theory believers are highly vocal in their promotion of alternative truths through various channels such as the internet, social media, and public gatherings (Imhoff & Lamberty, 2017). This may suggest that adopting conspiracy beliefs enhances feelings of control and assertiveness (Imhoff & Lamberty, 2017). Nevertheless, there may be other motivations for embracing a conspiratorial viewpoint (Imhoff & Lamberty, 2017). Being the person who uncovers the hidden truth behind the deception not only gives people a sense of control but also a sense of being unique, being among the few individuals who understand the truth (Imhoff & Lamberty, 2017).

Along similar lines, individuals with a strong desire for uniqueness are more inclined to embrace conspiracy theory beliefs as these conspiracy theories suggest the possession of extraordinary knowledge, which aligns with their need for uniqueness and to stand out (Lantian et al., 2017). Indeed, the inclusion of covert plots is an essential aspect of what defines a conspiracy theory (Lantian et al., 2017).

Being distinct and achieving success is a crucial part of the human experience, to the extent that it has been identified as a fundamental human motivation (Imhoff & Lamberty, 2017). Individuals who possess a heightened drive to differentiate themselves from others, may be more susceptible to embracing conspiracy theories (Imhoff & Lamberty, 2017). Nonetheless, if individuals meet their desire for uniqueness by endorsing conspiracy theory beliefs, then not all conspiracy theories may satisfy this need to the same degree (Imhoff & Lamberty, 2017). Considering that the need for uniqueness implies resistance to majorities while making minorities more appealing, it is suggested that individuals with a strong inclination towards uniqueness are more likely to support a conspiracy theory if it is endorsed exclusively by a select few (Imhoff & Lamberty, 2017). Conversely, they may be less inclined to adopt highly popular conspiracy theories (Imhoff & Lamberty, 2017).

This aligns with the suggestion that conspiracy theory endorsers often hold beliefs that are only shared by a small number of individuals (such as paranormal beliefs) and view themselves as genuine seekers of unique information (Imhoff & Lamberty, 2017).

3. Overview of hypotheses of the present study

In this present study it is argued that, in a situation of threat, vulnerability, and uncertainty such as the COVID-19 pandemic, the need to restore a positive self-image makes people more prone to believing in conspiracy theories (Douglas et al., 2019). Specifically, this study tested a causal relationship of the need for uniqueness on the tendency to **believe in a conspiracy theory, intention to adhere to pandemic guidelines and recommendations on an individual's own health, impact of conspiracy theory belief on health risk perceptions, concern of health risks to others, conformity, concern for negative consequences of not complying with pandemic guidelines and recommendations, and vaccine hesitancy**. This study's stance is similar to previous correlational and experimental studies such as by Lantian et al., (2017) and Imhoff and Lamberty (2017). Additionally, the study followed a between design, where participants in both experimental conditions of need for uniqueness, high need for uniqueness and low need for uniqueness, were presented with a conspiracy theory text.

Overall, this study tested for the following hypotheses:

Hypothesis 1: Higher need for uniqueness leads to lower intention to adhere to pandemic guidelines and recommendations for an individual's own health, lower concern of health risks to others, lower conformity, and lower concern for negative consequences of not complying with pandemic guidelines and recommendations than lower need for uniqueness.

Hypothesis 2: Higher need for uniqueness leads to higher conspiracy theory belief, higher impact of conspiracy theory belief on health risk perceptions, and higher vaccine hesitancy than lower need for uniqueness.

4. Methodology

4.1. Design

For the present study, there were two experimental conditions of need for uniqueness as the independent variable, a condition for high need for uniqueness and another for low need for uniqueness, manipulated between participants. The survey was designed and administered using Qualtrics. The survey was completely in English, from the instructions, introduction, text stimuli, questions, and answer options. Additionally, the study followed a between design, where both experimental conditions of need for uniqueness were randomly assigned to participants via a randomizer survey.

4.2. Participants

Overall, 66 participants took part on this experimental study, from the 22nd of April until the 5th of May 2023.

4.3. Recruitment strategy

Participants took part in the study on a voluntary basis, and the survey links were forwarded via social media, namely through WhatsApp and Instagram platforms. The study was distributed via links that randomly assigned and redirected participants directly to either of the two experimental conditions of the study survey.

4.4. Materials

4.4.1. Conspiracy theory

After reading the randomly assigned manipulation stimulus for each of the conditions for the independent variable, high need for uniqueness and low need for uniqueness, see Table 1 of Appendix A, participants were asked to carefully read a short conspiracy theory text that “COVID-19 is a manmade bioweapon”, see Appendix B. In the text, participants were presented with information on the conspiracy theory “COVID-19 is a manmade bioweapon”

taken and adapted from King's College London, n.d., *COVID: Top 10 Current Conspiracy Theories - Alliance for Science* (2020), and Imhoff and Lamberty (2020).

We reasoned that finding a conspiracy theory that is plausible to a certain extent, yet still a disproven and debunked theory, would be the best approach to nuance participants' tendency to believe in a conspiracy theory. It is important to note that at no point were participants informed that the text "COVID-19 is a manmade bioweapon" is indeed a conspiracy theory, to not bias the results. For this reason, we assumed that presenting participants with a highly unpalusible and easily refutable conspiracy theory, for instance "COVID-19 is a hoax" or "COVID-19 was caused by the rollout of 5G technology in cities", would largely increase the likelihood that participants would recognize the text as a conspiracy theory and reject it, biasing results.

Hence, we chose the conspiracy theory "COVID-19 is a manmade bioweapon", which still upholds plausibility to a certain extent, remains highly controversial and encourages ambiguity, yet has been disproven and debunked.

4.4.2. Independent variable – Need for uniqueness

For the present study, participants in the condition of high need for uniqueness were shown a text stimulus, presented at the beginning of the survey, aiming to manipulate participants towards a mindset that rejects conformity and standards, and reveres uniqueness and individuality. Participants with the condition of lower need for uniqueness were shown a text stimulus also presented at the beginning of the survey, aiming to manipulate participants towards a conforming mindset, which reveres fitting in with society's standards, embracing collectivism and conformity, while rejecting uniqueness and individualism. See Table 1 of Appendix A.

The present study also measured participants' need for uniqueness by relying on methods used in previous studies such as by Lantian et al. (2017), Imhoff and Lamberty (2017), and Lalot et al. (2019), and can also be considered as manipulation checks.

Specifically, certain components of both, the Need for Uniqueness scale (NfU) developed by Snyder and Fromkin (1977) and the SANU scale proposed by Lynn and Harris (1997) were

used in the present study, to measure participants' need for uniqueness, based on existing measures (Lalot et al., 2019).

The NfU scale was developed to assess the need for uniqueness as an individual tendency (Lalot et al., 2019), and certain items from the scale were used in the present study. Items such as Factor 1: Lack of concern of the NfU scale, "*In most things in life, I'd rather have certainty than take risks*" and from Factor 2: Desire to not always follow rules, "*I'd rather have a reputation for experimenting with new ideas than for employing well-known methods*", on a scale of 1 = *Does not describe me* to 7 = *Definitely describes me*, were employed in the present study. See Appendix C.

Additionally, items of the SANU scale were also used in the present study, a scale proposed by Lynn and Harris (1997) focusing on personal expression on the need for uniqueness in four items (Lalot et al., 2019), and can also be considered a manipulation check. The present study employed three of the items of the SANU scale, "*I prefer to be different from other people.*", "*Being different is important to me.*", and "*I do things to differentiate myself from others.*" to measure participants' need for uniqueness (Lalot et al., 2019). In such, participants were asked to rate themselves from 1 = *Not at all* to 7 = *Extremely*. See Appendix D.

4.4.3. Dependent variables

To measure participants' **intention to adhere to pandemic guidelines and recommendations for their own health**, we asked participants to rate on a scale of 1 = *Not likely* to 7 = *Extremely likely*, their likeliness to engage in a series of pandemic recommended behaviors after reading the conspiracy theory text. Recommended behaviors options included wear facial masks frequently, wash your hands after every outing, avoid crowded settings, amongst others.

We further measured **conspiracy theory belief** by asking participants to rate how much they agree with the conspiracy theory text, "COVID-19 is a manmade bioweapon", on a scale of 1 = *Do not agree* to 7 = *Extremely agree*. In addition, participants were asked to rate on a scale of 1 = *Do not believe at all* to 7 = *Extremely believe in it* how much they believe in highly unpalusible COVID-19 conspiracy theories, such as how "the rollout of 5G technology in cities is a deliberate way of spreading the COVID-19 virus" and "COVID-19 is a hoax".

We also measured the **impact of conspiracy theory belief** with the text “COVID-19 is a manmade bioweapon” on health risk perceptions, namely participants’ intentions to adhere to pandemic guidelines and recommendations, on a scale of 1 = *Does not increase* to 7 = *Definitely increases*.

Additionally, we measured participants’ **concern of health risks to others, conformity, concern for negative consequences of not complying with pandemic guidelines and recommendations**, and **vaccine hesitancy**.

To measure the **concern of health risks to others**, participants were asked to rate on a scale of 1 = *Do not agree* to 7 = *Extremely agree*, how much they agree to the notion that universal pandemic guidelines and recommendations (mask wearing, hand washing) allows one member of society to look out not only for themselves and their loved ones, but for the next person and their loved ones.

Furthermore, to measure **conformity**, participants were asked to rate on a scale of 1 = *Not effective* to 7 = *Extremely effective*, how much they believe that pandemic guidelines and recommendations are effective in preventing community mass spreading and halting the spread of the COVID-19 virus.

Measuring for the **concern for negative consequences of not complying with pandemic guidelines and recommendations**, participants were asked to rate on a scale of 1 = *Not concerned* to 7 = *Extremely concerned*, the extent to which negative consequences such as monetary fines or imprisonment of not complying with pandemic guidelines and recommendations concerns them.

Finally, to measure **vaccine hesitancy**, participants were asked to rate on a scale of 1 = *Do not intend* to 7 = *Definitely intend*, their intention to get a COVID-19 vaccine shot in the upcoming week, given they did not have any information on the COVID-19 vaccine. Participants were also asked to rate on a scale of “*I would not take any shots of the vaccine*” to “*As many shots as necessary*”, their willingness in receiving more doses of the COVID-19 vaccine by next winter.

See Appendix E to see all scales used for the dependent variables.

4.4.4. Control variables

For control measures, participants were asked if they had ever contracted COVID-19, and if indeed, they were asked to clarify the severity of their symptoms, with scales ranging from “*Symptoms were extremely severe (intubation, need of ventilator, spending at least one night in the hospital)*” to “*I have never contracted COVID-19*”. Additionally, participants were also asked if they, a family member, or a loved one worked in the healthcare sector, whereas those who did were asked to specify in which area of the healthcare sector they, a family member, or a loved one worked in.

By introducing these control questions, we can in turn discard alternative explanations for the results and better understand our sample. See Appendix F to see how what the control measures appeared as to participants in the survey.

4.4.5. Manipulation check

For the manipulation check, participants were asked how much reading the conspiracy theory text **increased their intention to adhere to pandemic guidelines and recommendations**, on a scale from 1 = *Does not increase* to 7 = *Definitely increases*.

Additionally, a manipulation check of the need for uniqueness was introduced as a question within the survey, where participants were asked to rate their **perceived level of importance of individuality (vs. conformity)**, on a scale from 1 = *Not important* to 7 = *Extremely important*. Indeed, this was slightly modified from a procedure to manipulate need for uniqueness in a study by Lantian et al. (2017), where the importance of individuality (vs. conformity) is supposed to highlight the increase (vs. decrease) of the need to feel unique. See Appendix G.

Additionally, items from both the NfU scale and the SANU scale were introduced in the present study as a means of **measuring participants’ need for uniqueness** and may also be considered as manipulation checks. See Appendix C and D respectively.

4.4.6. Demographic questions

For this present study, demographic measures were collected last. In such, **age** group scales ranged from *18 years old and under*, *18 to 30 years old*, *31 to 50 years old*, and *51 years old*

and above. Participants were also asked to select their **gender** with scales, *Male, Female, Non-binary/third gender*, and *Prefer not to say*.

Participants were also asked to specify their **current highest level of education**. Additionally, participants were asked to specify their **current main occupation**. See Appendix H to see what the demographic questions appeared to participants as in the survey.

4.5. Procedure

Participants were asked to click on a link to begin the survey and were then randomly assigned to either one of the experimental conditions, higher need for uniqueness or lower need for uniqueness. Participants then read an introductory information page where they were briefly introduced to the study, were assured their responses would remain anonymous, and gave their consent to take part. They were asked to carefully read the manipulation text assigned to each condition, and were then asked to carefully read the conspiracy theory text. At no point were participants informed that the conspiracy theory text is a conspiracy theory, to not bias the results.

After reading the text about COVID-19, participants completed the measure on their **intention to adhere to pandemic guidelines and recommendations for their own health**.

Participants then proceeded to complete the scales measuring their **conspiracy theory belief**. Next, we measured the **impact of the conspiracy theory text on participants' answers**. Furthermore, participants then filled scales measuring their **concern of health risks to other individuals in society, conformity, concern for negative consequences of not complying with pandemic guidelines and recommendations**, and **vaccine hesitancy** using different scales respectively. See Appendix E to see all scales used for the dependent variables.

Subsequently, participants were asked how much reading the conspiracy theory text increased their intention to adhere to pandemic guidelines and recommendations, as a manipulation check. In addition, participants were asked to rate their perceived level of importance of individuality (vs. conformity). Finally, control questions were introduced.

Demographic measures were collected last, appearing in the same order at the end of the survey. Finally, this was followed by a short message thanking participants for their participation and signaling the end of the survey.

See Appendix I to see the full survey.

5. Results

5.1. Basic demographics

Among the 64 valid responses for all demographics, (43.8%) of participants were aged *51 years old* and above, while (39.1%) were in the *18-30 years old* age group. The *31-50 years old* age group accounted (15.6%) of participants, and (1.6%) were *under 18 years old*.

Furthermore, the majority of participants had a *Bachelor's degree* (42.2%) or a *Master's degree* (29.7%). A smaller proportion had a *High school diploma or equivalent degree* (14.1%) or a *Doctorate degree* (14.1%), while no participants reported having *No degree*.

Regarding gender, the majority of participants identified as *Female* (56.3%), while a significant portion identified as *Male* (43.8%). There were no participants who identified as *Non-binary/third gender* or *Prefer not to say*.

In terms of occupation, the most common occupation was *Full-time employment* (34.4%), followed by *Working students* (25.0%). Participants who were *Self-employed* accounted (18.8%) of the valid cases. *Part-time employment*, *Student*, *Retired*, and *Unemployed* had lower frequencies ranging only from 3 to 6 participants.

5.2. Cronbach's alpha for multi-scale items

Cronbach's alpha was calculated for four measures in the present study. The measure on how likely participants are to engage in a series of pandemic recommended behaviors after reading the conspiracy theory had good internal consistency ($\alpha = .877$). The measure on how much participants believe in different conspiracy theories had acceptable internal consistency ($\alpha = .684$), and removing the last item improved Cronbach's alpha. The measure on participants' need for uniqueness (NfU scale) had acceptable internal consistency ($\alpha = .796$), and removing the fourth item slightly improved Cronbach's alpha. The measure on

participants' need for uniqueness (SANU scale) had excellent internal consistency ($\alpha = .930$), with no items needing to be removed. Indeed, calculating Cronbach's alpha is a way to ensure our measures have good internal consistency.

5.3. Control variables

Participants' responses consist of 64 valid cases, representing 97% of the total, and 2 missing cases, representing 3.0% of the total.

Among those who reported symptoms, participants whose *Symptoms were mild* had the highest frequency, with 45 participants, accounting for (70.3%) of the valid cases. This was followed by participants who have *Never contracted COVID-19*, with the second-highest frequency, with 10 participants, representing (15.6%) of the valid cases. Participants whose *Symptoms were severe* and those with *No symptoms at all* have lower frequencies, with 5 and 3 participants, respectively. Finally, participants whose *Symptoms were extremely severe* had the lowest frequency, with only 1 participant. In summary, among the participants in this study, the majority reported having *Mild symptoms* (70.3%) or *Never having contracted COVID-19* (15.6%). There were fewer participants who reported *Severe symptoms*, *No symptoms*, or *Extremely severe symptoms*.

In this study, participants were asked about their affiliation with the healthcare sector, either by working themselves in the healthcare sector, or a family member or loved one. Among the valid cases, the majority (62.5%) responded *No* to having an affiliation to the healthcare sector. On the other hand, (37.5%) answered *Yes*.

For the participants affiliated with the healthcare sector, the most common healthcare area reported was *Medical Doctor*, with (19.7%) of the valid cases. Other categories, such as *Nurses*, *Pharmaceutical industry professionals*, *Dentists*, and *Emergency unit workers*, had smaller frequencies ranging from (1.5%) to (3.0%). In summary, the majority of participants in this study do not have a connection to the healthcare sector (62.5%). However, (37.5%) reported being involved in different healthcare areas. Table 2 in Appendix J provides a descriptive statistics table with the frequencies of the control variables, where we can see that both groups, high and low need for uniqueness are homogenous in their familiarity and exposure to the COVID-19 virus.

5.4. Manipulation checks

The output described is the result of independent samples t-tests conducted in SPSS. The t-tests compare the means of the groups corresponding to the two experimental conditions, high need for uniqueness and low need for uniqueness, on the different manipulation checks.

For the manipulation check on the impact of the conspiracy theory text on participants' response, "Manipulation_impact_answer", the t-test indicates there is no significant difference ($t(63) = -0.21, p = .418$) between the high need for uniqueness condition ($M = 3.61, SD = 2.40$) and low need for uniqueness condition ($M = 3.74, SD = 2.31$).

For the manipulation check where participants were asked to rate their perceived level of importance of individuality (vs. conformity), "Manipulation_individuality_conformity", the t-test output indicated that there is no significant difference ($t(62) = .19, p = .424$) between the high need for uniqueness condition ($M = 5.00, SD = 1.39$) and the low need for uniqueness condition ($M = 4.94, SD = 1.19$).

For the measure on participants' need for uniqueness based on the NfU scale by Snyder and Fromkin (1977), "Average_NfU", there is no significant difference ($t(62) = 1.05, p = .149$) between high need for uniqueness ($M = 4.27, SD = 1.28$) and low need for uniqueness ($M = 3.96, SD = 1.06$).

Finally, for the measure on participants' need for uniqueness based on the SANU scale by Lynn and Harris (1997), "Average_SANU", there is also no significant difference ($t(61) = 0.21, p = .418$) between high need for uniqueness ($M = 3.91, SD = 1.69$) low need for uniqueness ($M = 3.82, SD = 1.71$).

5.5. Dependent variables

First, we examined the t-test output for the variable measuring participants' **intention to adhere to pandemic guidelines and recommendations for their own health**. As it is a multi-scale item, the average was taken, hence the name "Average_intention". In such, the result of the t-test indicates that there is no significant difference ($t(64) = .59, p = .280$) between high need for uniqueness ($M = 5.12, SD = 1.72$) and low need for uniqueness ($M = 4.86, SD = 1.77$) for

the variable “Average_intention”. Therefore, due to no statistical significance, we cannot confirm our hypothesis.

For the variable measuring “Conspiracy_belief”, asking **how much participants agree with “COVID-19 is a manmade bioweapon”**, the t-test indicated there is no significant difference ($t(63) = -.84, p = .201$) between high need for uniqueness ($M = 2.55, SD = 1.94$) and low need for uniqueness ($M = 2.94, SD = 1.81$). Similarly, we cannot confirm our hypothesis.

For the variable measuring participants’ **belief in different conspiracy theories**, ranging from absurd to more plausible conspiracy theories, “Average_conspiracybelief”, the t-test indicated there is no significant difference ($t(64) = .50, p = .480$) between high need for uniqueness ($M = 2.77, SD = 1.38$) and low need for uniqueness ($M = 2.75, SD = 1.20$). Therefore, we cannot confirm our hypothesis.

For the variable measuring participants’ **concern for others in society**, named “Concern_others”, the t-test indicated there is no significant difference ($t(64) = .48, p = .316$) between high need for uniqueness ($M = 5.91, SD = 1.45$) and low need for uniqueness ($M = 5.71, SD = 1.90$). Along similar lines, our hypothesis cannot be confirmed.

For the variable measuring **how much participants view pandemic guidelines and recommendations as effective**, “Conformity”, the t-test output indicated there is no significant difference ($t(62) = .77, p = .222$) between high need for uniqueness ($M = 5.23, SD = 1.59$) and low need for uniqueness ($M = 4.91, SD = 1.70$). Indeed, our hypothesis cannot be confirmed.

Interestingly, however, for the variable “Concern_consequences”, measuring the extent to which participants are **concerned about the negative consequences of not complying with pandemic guidelines and recommendations**, the t-test indicated there is a statistically significant difference ($t(63) = 1.80, p = .039$) between high need for uniqueness ($M = 4.69, SD = 1.98$) and low need for uniqueness ($M = 3.85, SD = 1.79$). The assumption of Levene's test of equal variances is in this case not met, implying that the variability of the data differs significantly across the experimental conditions of high need for uniqueness and low need for uniqueness. For this variable, we reject our hypothesis.

For the variable measuring participants’ **hesitancy in taking the COVID-19 vaccine**, “Vaccine_hesitancy”, both t-tests indicated there is no significant difference ($t(61) = -.20, p = .492$) between high need for uniqueness ($M = 4.65, SD = 2.06$) and low need for uniqueness ($M = 4.66, SD = 2.31$). For the second measure of **vaccine hesitancy**, there was also no

significant difference ($t(61) = .11, p = .457$) between high need for uniqueness ($M = 3.66, SD = 1.56$) and low need for uniqueness ($M = 3.61, SD = 1.63$). Therefore, our hypothesis is not confirmed.

In summary, there is a statistically significant difference between the two groups corresponding the two experimental conditions, high need for uniqueness and low need for uniqueness, for the variable “Concern_consequences”. For all of the other variables, there is no significant difference between the two experimental conditions.

Furthermore, Levene's test for equality of variances tests the presumption that variances are equal in all samples (Glen, 2022). In other words, Levene's test checks whether the variances of the two individual samples are equal (Glen, 2022). In the case of all variables, except for “Concern_consequences”, the assumptions of equal variances are met. However, the assumption of Levene's test of equal variances is in this case of “Concern_consequences” not met, as the variability of the data differs significantly across the two experimental conditions.

5.6. Regression analysis for further explanations

Due to the lack of statistically significant differences for the variables, regression analyses were conducted to test if the variables need for uniqueness (the NfU and SANU scales) are predictors of the other variables.

For the variable measuring the extent to which participants are **concerned about the negative consequences of not complying with pandemic guidelines and recommendations**, based on the regression analysis, the coefficient for the need for uniqueness variable (Average_NfU) is positive ($\beta = .460, p = .025$). This indicates a positive relationship between need for uniqueness and concern for the negative consequences of not complying with pandemic guidelines and recommendations. The coefficient is statistically significant, suggesting that higher levels of need for uniqueness are associated with greater concern for the negative consequences of non-compliance with guidelines. Therefore, the analysis rejects the hypothesis that higher need for uniqueness leads to lower concern for the negative consequences of not complying with pandemic guidelines and recommendations. Instead, individuals with a higher need for uniqueness demonstrate higher levels of concern for the potential negative consequences of non-compliance. This finding suggests that higher need for uniqueness does not necessarily

translate into a disregard for the consequences of non-compliance, but rather an increased awareness of the potential risks involved.

Nevertheless, the regression analysis revealed that the average score of need for uniqueness (NfU scale) is a not significant predictor of the variable measuring participants' **concern for others**, ($\beta = -.177, p = .326$). This indicates that higher need for uniqueness is associated with lower levels of concern for others, as the negative beta coefficient suggests an inverse relationship between the need for uniqueness and concern for others. In other words, individuals with a higher need for uniqueness tend to exhibit less concern for others. However, the regression analysis does not provide statistically significant evidence to support the hypothesis that higher levels of need for uniqueness are associated with lower levels of concern for others. Therefore, these findings do not allow us to confirm or reject our hypothesis.

The regression analysis revealed that the average score of need for uniqueness (NfU scale) is not a significant predictor the variable measuring participants' **intention in adhering to health guidelines for their own health** ($\beta = -.226, p = .230$). The negative coefficient suggests that as the level of need for uniqueness (NfU) increases, there is a slight decrease in the average intention. However, the coefficient is not statistically significant, thus the relationship between need for uniqueness and average intention may not be statistically reliable. Therefore, we cannot confirm our hypothesis that a higher need for uniqueness leads to a lower intention in adhering to health guidelines for one's own health. The slight negative correlation suggests a potential relationship, but the lack of statistical significance indicates that the observed relationship may not be reliable.

The same is observed for the variable measuring how much participants **view pandemic health guidelines as effective**, with the coefficient for the need for uniqueness variable (Average_NfU) being negative ($\beta = -.078, p = .663$). Similarly, for the variable measuring participants' **hesitancy in taking the COVID-19 vaccine**, the coefficient for the need for uniqueness variable (Average_NfU) is negative for both measures, ($\beta = -.272, p = .253$) and ($\beta = -.253, p = .137$) respectively, indicating a negative relationship between need for uniqueness and hesitancy in taking the COVID-19 vaccine. However, it is important to note that the coefficients are also not statistically significant.

For the variable measuring how much participants **agree with the conspiracy theory "COVID-19 is a manmade bioweapon"**, the coefficient for the need for uniqueness variable (Average_NfU) is positive ($\beta = .233, p = .255$), indicating a positive relationship between need

for uniqueness and belief in conspiracy theories. However, the coefficient is not statistically significant. Based on this analysis, we cannot confirm our hypothesis that a higher need for uniqueness leads to higher belief in conspiracy theories. The positive correlation suggests a potential relationship, but the lack of statistical significance indicates the relationship may not be reliable. The same is observed for the variable measuring participants' **belief in different conspiracy theories**, with the coefficient for the need for uniqueness variable (Average_NfU) being positive ($\beta = .233, p = .089$), but not statistically significant.

Furthermore, based on the regression analysis, none of the coefficients for the need for uniqueness variable (Average_SANU), are statistically significant in relation to the other variables, seen in Table 3 of Appendix K, indicating that the observed relationships between need for uniqueness and the dependent variables may be due to other reasons. In such, the need for uniqueness variable (Average_SANU) is not a predictor of any of the dependent variables.

The purpose of running a regression analysis was to investigate whether the variables measuring the need for uniqueness (NfU and SANU scales) could serve as a predictor for the dependent variables, despite most results not being statistically significant. One assumption was, since we observed no differences in the need for uniqueness variable, it could imply that our manipulation did not effectively influence participants' need for uniqueness as expected. By examining if the need for uniqueness predicts other variables, we can assess whether our hypotheses are supported, while also acknowledging the need for improvements in our methodology in future studies. Although most of the regression findings did not result in statistically significant relationships, our underlying hypotheses are not necessarily invalidated. Indeed, it suggests that the observed relationships between the need for uniqueness and the dependent variables may not be reliably examined in the present study. The lack of statistical significance may be due to many factors like sample size, measurement limitations, or the complexity of the relationships.

6. Discussion

6.1. Discussion of study findings

As observed in the previous section, for the variable “Concern_consequences”, measuring the **extent to which participants are concerned about the negative consequences of not complying with pandemic guidelines and recommendations**, the t-test indicated there is a statistically significant difference between high need for uniqueness condition and low need for uniqueness condition. It was observed that the high need for uniqueness condition showed higher concern about the negative consequences than low need for uniqueness. In our hypothesis, we assume that higher need for uniqueness leads to less concern for the negative consequences of not complying with pandemic guidelines and recommendations than those with a lower need for uniqueness.

However, since the difference between both experimental conditions for this variable is the only statistically significant in this study, it allows us to reject our hypothesis. Although unexpected, these findings can be explained by a few potential reasons such as, those with a higher need for uniqueness may be more sensitive to social judgment and negative attention, impacting their desire for a positive self-image, a concept explored by Douglas et al., (2019) and Section 2 of this study. Non-compliance with guidelines could attract criticism and disapproval from others, which may be difficult for individuals who value a unique identity and extreme validation. The fear of negative consequences and lack of validation, might increase their concern about the negative consequences of not following the pandemic guidelines and recommendations. Additionally, those with a higher need for uniqueness may perceive the guidelines to protect their individuality. They might view compliance as a way to ensure their own well-being and maintain their own identity, as not adhering to the pandemic guidelines and recommendations could challenge their ability to preserve their personal values and result in a lack of validation. In such, according to Douglas (2021), during scenarios of extreme uncertainty, such as grim world events like the COVID-19 pandemic, individuals’ psychological needs can be overburdened. Unpredictability, uncertainty, and fear for the future are common, and while searching for answers, individuals are often confronted with conflicting explanations within a complex information landscape (Douglas, 2021). Important information such as pandemic-health guidelines, restrictions, and recommendations also change frequently,

adding to the confusion and the struggle between the desire to maintain one's unique image and the fear of negative consequences (Douglas, 2021).

In our hypothesis, we hypothesize that higher need for uniqueness leads to higher conspiracy theory belief. However, we were unable to confirm our hypothesis, as the t-test indicated there is no significant difference between high need for uniqueness and low need for uniqueness. For this reason, we conducted t-tests on the individual items of the multi-scale, namely the different conspiracy theories ranging from absurd to more plausible ones, to see if any significant difference between the two experimental conditions were observed for each individual conspiracy theory.

Along these lines, we observed that belief in the conspiracy theory "COVID-19 is a manmade bioweapon", "Conspiracybelief_bioweapon", is slightly lower among individuals with a high need for uniqueness than to those with a low need for uniqueness. This finding suggests that, contrary to our hypothesis, individuals with a high need for uniqueness are not more likely to believe in this particular conspiracy theory than those with a low need for uniqueness, however the difference was not statistically significant and thus, our hypothesis cannot be confirmed.

Interestingly, the other conspiracy theories such as "COVID-19 was planned by higher powers", "COVID-19 was caused by the rollout of 5G technology in cities", "COVID-19 is a hoax", and "ingesting disinfectant solutions", have no significant differences between the two experimental conditions of high need for uniqueness and low need for uniqueness. This indicates that for the mentioned conspiracy theories, except for "COVID-19 is a manmade bioweapon", there is no indication that individuals with a high need for uniqueness are more likely to believe in conspiracy theories, from absurd to more plausible ones, compared to those with a low need for uniqueness.

Nonetheless, for the conspiracy theory "COVID-19 is a manmade bioweapon", perhaps a reason why we observe this unique trend, where those with a low need for uniqueness show a slightly higher tendency to believe more in the conspiracy theory than those with a high need for uniqueness, contrary to our hypothesis, can be explained by considering the nature of the conspiracy theory itself.

In this case, it is possible that the conspiracy theory "COVID-19 is a manmade bioweapon" is perceived as relatively more plausible compared to other conspiracy theories in the study, which may have been more absurd. When individuals are presented with a conspiracy theory that appears more plausible, their personal need for uniqueness may have a lesser influence on their

belief, leading to less uncertainty, less questions being asked, and more conformity. Along similar lines, individuals with a lower need for uniqueness may be more likely to conform to societal norms and beliefs. They may have a stronger tendency to align their beliefs with the majority opinions in society. In the context of the conspiracy theory, if the majority belief is to consider the conspiracy theory as valid, namely the conspiracy theory being plausible, those with a lower need for uniqueness may be more inclined to adopt that belief.

On the other hand, the assumption that individuals with a higher need for uniqueness are more likely to engage in conspiracy theory belief is based on the notion that they may be drawn to unconventional explanations as a way to differentiate themselves from others. However, in the case of a relatively plausible conspiracy theory like “COVID-19 is a manmade bioweapon”, the need for uniqueness may not play a significant role as individuals with a higher need for uniqueness may resist conforming to popular beliefs. They may be more motivated to form their own unique perspectives. As a result, they may be less likely to accept the conspiracy theory even if it aligns with what seems more plausible, as it is more accepted by the majority due to its plausibility and inability to be easily refuted.

Additionally, it is important to note that the differences for low need for uniqueness are slightly higher, but not significantly different, compared to those with high need for uniqueness. This suggests that the need for uniqueness does not strongly influence the belief in this particular conspiracy theory, as the differences in means are not statistically significant.

Indeed, the analysis of the different conspiracy theories suggests the assumption that individuals with a higher need for uniqueness are more likely to believe in conspiracy theories is not consistently supported. While there may be slight variations in mean beliefs for certain conspiracy theories, the differences are generally small and are not statistically significant to confirm or reject our hypotheses.

Similarly, for the variable measuring participants' need for uniqueness based on the NfU scale by Snyder and Fromkin (1977), “Average_NfU”, we were unable to confirm our hypothesis as the t-test indicated there is no significant difference between high need for uniqueness and low need for uniqueness. For this reason, we conducted t-tests on the individual items of the multi-scale, namely the different items of the NfU scale participants were presented with, to determine if any significant difference between the two experimental conditions was observed for each individual item. For the item “*It is important that I know more information than others.*”, “NfU_moreinformation”, the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. Although the difference is not

statistically different, this finding suggests that individuals with a higher need for uniqueness are indeed more likely to rate higher on this statement, thus supporting the hypothesis, although we are unable to confirm it as differences are not statistically significant.

This is also observed for the other items of the NfU scale, "*It is important that the information I know is more unique or even rare.*", where the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. This is similarly seen for the item, "*I have sometimes dared to be different in ways that others disapprove or even feel offended by.*", where the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. Likewise observed for all other items, "*I'd rather have a reputation for experimenting with new ideas than employing well-known methods.*", where the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. As well as for "*I express my opinions openly, regardless of what others say.*", where the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. These findings suggest that individuals with a higher need for uniqueness are more likely to rate higher on these statements measuring for the need for uniqueness, supporting the assumptions, however due to non-statistical significance in differences, we cannot confirm our hypotheses.

However, for the item, "*In most things in life, I'd rather have certainty than take risks.*", the individual t-test indicated that high need for uniqueness has a higher mean than the condition for low need for uniqueness. It is assumed that those with a lower need for uniqueness tend to prefer certainty over taking risks, as they are more likely to embrace conformity. Nonetheless, although the difference is not statistically significant between the two conditions, the tendency observed indicates that individuals with a higher need for uniqueness tend to rate slightly higher on this item than those with a lower need for uniqueness, contradicting the assumption. While individuals with a high need for uniqueness may have a lower tendency to conform to the majorities, their preference for certainty over taking risks may be explained by a desire for personal validation and confidence in their own unique perspectives.

By seeking validation, individuals with a high need for uniqueness may desire to validate their non-conformist beliefs by seeking certainty, and by preferring certainty over taking risks, they may feel more confident in their unique perspectives and less influenced by external opinions. This preference for certainty provides them with a sense of validation in their unique beliefs, as the need for a positive-self-image of those with a high need for uniqueness may be explained

by their desire to feel confident in their own judgments as unique thinkers. Indeed, these concepts have been explored in Section 2 of this study. As suggested in research by Douglas et al., (2019), those with a strong need to maintain a positive self-image and *feel unique* in relation to others, often associated with the extreme desire for validation, are also those more likely to engage in conspiracy theory beliefs, as believing in conspiracy theories allows them to reject official explanations and feel a higher sense of control, and thus, “*allow people to feel that they possess a better account.*” (Douglas et al., 2019, p. 8). Furthermore, individuals with a high need for uniqueness may perceive uncertainty as a threat to their identity and to reduce this uncertainty, they may give greater preference for certainty. By seeking certainty, these individuals can establish a more stable foundation for their beliefs, which aligns with their higher need for uniqueness. This also conforms to the observed tendency that those with a higher need for uniqueness tend to rate slightly higher on the different items of the NfU scale than those with a lower need for uniqueness.

Interestingly, for the item “*I find it difficult to work with strict rules and standards.*”, the individual t-test indicated that low need for uniqueness has a higher mean than the condition for high need for uniqueness, contrary to the assumption. The difference is not statistically significant; therefore, we cannot confirm our hypothesis. However, potential explanations for this unexpected finding, although differences are not statistically significant, is that individuals with a lower need for uniqueness are generally more prone to conform to social norms and thus, may find it easier to conform to rules and standards. Nonetheless, when it comes to working with strict rules and standards, their potential difficulty may stem from a few factors, for instance, those with a lower need for uniqueness may conform to social norms to fit in, but this does not necessarily mean they prefer working with strict rules and standards. They may find these standards limiting to their freedom. It is important to outline that the need for conformity might be the result of social pressures rather than a genuine preference for strict rules and standards. While those with a lower need for uniqueness may conform to social norms more than those with high need for uniqueness, they might also prioritize their personal values over strict rules and standards. Indeed, if there is an evident conflict between their values and the rules and standards, they may have trouble working in those strict rules and standards.

The lack of statistically significant results for the need for uniqueness variable “Average_SANU” in this study raises important implications for future research. As both SANU and NfU are two measures of the same construct, measuring the need for uniqueness, we expect them to provide similar results. However, the lack of significant findings of the

SANU measure suggests that it may not be a reliable tool for measuring the need for uniqueness, as it is not a significant predictor in this study due to the inconclusiveness of results. Indeed, it is crucial to explore whether the SANU measure accurately assesses the need for uniqueness or if our dependent variables (such as concern of negative consequences of not complying with pandemic guidelines and recommendations, belief in conspiracy theories, etc.) truly project the impact of the need for uniqueness. Future studies should examine whether alternative measures or different dependent variables would be better to understand the role of the need for uniqueness.

In summary, due to the limiting nature of the significance of results in this study, as most of the variables did not result in statistically significant differences between the two experimental conditions, high and low need for uniqueness, this discussion highlighted the findings most unexpected and indeed, significant to be discussed for the purposes of this study.

6.2. Limitations of the present study

Fundamentally, the present study has several limitations that need to be addressed. Firstly, there were limitations in the manipulation of the independent variable, need for uniqueness and its two experimental conditions, high and low need for uniqueness. The manipulation stimulus presented to participants at the beginning of the survey was not strong enough to effectively manipulate participants into a mindset of high or low need for uniqueness. This weak manipulation may have minimized the impact of the independent variable on the dependent variables. Furthermore, it was challenging to ensure that participants paid sufficient attention to the manipulation texts when participating in the survey. Despite efforts to emphasize the importance of these texts, many participants reported paying more attention to the conspiracy theory text rather than the manipulation text. This lack of attention to the manipulation might have influenced participants' responses, affecting the internal validity of the study. In such, the lack of appropriate manipulation materials must be addressed for future studies, as evidently supported in the present study by the lack of differences in the manipulation checks.

Secondly, the sample size of 66 participants is relatively small, which may limit the reliability of findings. A larger sample size would provide more reliable results to increase the statistical impact of the study.

Participants' feedback also indicated that some of them had difficulty understanding the manipulation texts. This raises concerns about the effectiveness of the manipulation used. It is important to address these limitations in future research by employing stronger manipulations, different measures, and ensuring participants' engagement with the experimental conditions.

Overall, these limitations should be considered when interpreting the results. To gain a better understanding and draw more significant conclusions, it is recommended to improve the methodology in future studies. This may involve improving the manipulation of the need for uniqueness, increasing the sample size, employing different measures, or exploring other variables that could better contribute to the observed relationships. By addressing these methodological improvements, future research can provide clearer insights into the hypothesized relationships between the need for uniqueness and the suggested variables.

6.3. Theoretical implications

For the present study, it is important to acknowledge that need for uniqueness in relation to the tendency to believe in conspiracy theories may not be as significant as initially hypothesized. Indeed, it is possible that other factors play a significant role on individuals' belief in conspiracy theories. Future studies could explore these other factors and their relevance on conspiracy theory beliefs, providing a more prominent understanding.

Contrary to the hypothesis, the findings of this study show that individuals with a higher need for uniqueness have a greater concern for the negative consequences of not complying with pandemic guidelines and recommendations than those with a lower need for uniqueness. This unexpected result can be explained by fear of social judgment and negative attention, fear of disapproval from others, and the perception that guidelines may protect their individuality. These findings align with previous research by Douglas et al. (2019), which highlights the importance of a positive self-image, validation, and the struggle between the need for uniqueness and fear of negative consequences. According to Douglas (2021), individuals' psychological needs can be overburdened during times of extreme uncertainty, such as in the COVID-19 pandemic, where conflicting explanations and changing information contribute to the struggle between maintaining uniqueness and fear of negative consequences.

Further research by Van Prooijen & Douglas (2018) has also shown that individuals who believe in conspiracy theories may also experience stigma from others, while expressing

conspiracy beliefs may increase their fear of social exclusion and alienation. Furthermore, individuals who believe in conspiracy theories may also suffer from negative interpersonal relationships, largely related to individual differences such as narcissism, paranoia, anxiety, disagreeableness, and Machiavellianism (Van Prooijen & Douglas, 2018).

6.4. Managerial implications

Based on the findings of this study, managerial implications may be suggested, such as promoting collective responsibility. Managers should emphasize the importance of collective responsibility in promoting adherence to health guidelines, recommendations, and vaccination efforts. By highlighting the finding that individuals with a higher need for uniqueness also show greater concern of not complying with pandemic guidelines and recommendations, and by framing health-related behaviors as acts of consideration for the well-being of oneself and others, individuals' awareness of their impact on others are emphasized, encouraging responsible behaviors.

Furthermore, managers should develop communication strategies focused on social connection of health-related behaviors. This fosters a sense of connection and motivates individuals to prioritize the health of others.

Additionally, managers should create opportunities for individuals to express their uniqueness while promoting the common goal of protecting others' health. Encouraging unique approaches to promote adherence to pandemic guidelines and recommendations enables individuals to showcase their unique contributions while embracing a collective sense of responsibility.

7. Suggestions for future studies

In future research, it would be interesting to investigate the interaction between the need for uniqueness and a second independent variable, threat to intelligence, to gain a deeper understanding of their combined effects, similarly to the present study.

This study would manipulate the affirmation and understanding of participants, in addition to the need for uniqueness, assuming that individuals with a high need for uniqueness also have a strong desire to feel good about their intelligence. To accomplish this, two groups of

participants would be formed. The first group would be asked concrete and direct questions about a conspiracy theory and the COVID-19 pandemic, while the second group would receive more general and abstract questions. We hypothesize that concrete questioning would be associated with a lower need for uniqueness, greater conformity, and a lower tendency to believe in conspiracy theories. Conversely, abstract questioning would be associated with a higher need for uniqueness, more uncertainty and a higher tendency to believe in conspiracy theories. A similar concept of a mental construal, explored by Trope and Liberman (2010), which tests how the level of construal becomes more abstract as an object becomes more distant from direct experience, could be employed as reference (Trope and Liberman, 2010). Additionally, another study by Heiss et al. (2021) could also be used as a reference, which indicates that high threat perceptions promote conspiracy theory beliefs, and that the “intelligence effect” of anxiety, found in low-risk environments with accessible information, may not apply in situations with high levels of uncertainty (Heiss et al. 2021).

In this future research proposal, both groups would be exposed to the same conspiracy theory, but one group would also receive a challenging argument against the conspiracy theory, while the other group would only receive the conspiracy theory. The expectation is that individuals with a high need for uniqueness and a high threat to intelligence would be more likely to believe in plausible conspiracy theories, even when presented with a challenging argument. On the other hand, individuals with a low need for uniqueness and a low threat to intelligence are expected to be less inclined to believe in such theories, even without a challenging argument.

Overall, this future study aims to test the causal relationship between the need for uniqueness and threat to intelligence on conspiracy theory beliefs, health risk perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic with different questioning approaches, and debunking information on conspiracy theories.

8. Conclusion

The objective of this present study is to test a causal relationship of the effect of the need for uniqueness on the tendency to believe in a conspiracy theory, health risk perceptions, and intention to adhere to health guidelines during the COVID-19 pandemic.

Nonetheless, the findings of this study were limited regarding its statistical significance, with most dependent variables not yielding significant differences between the two experimental

conditions of high and low need for uniqueness. Despite these limitations, there were unexpected findings that deserve further discussion, such as a significant difference between high and low need for uniqueness in terms of participants' concern about the negative consequences of not complying with pandemic guidelines and recommendations.

Contrary to our hypothesis, those with a higher need for uniqueness showed higher concern than those with a lower need for uniqueness. This unexpected result suggests that those with a higher need for uniqueness may be more sensitive to social judgment and negative attention, impacting their desire for a positive self-image. Interestingly, there were also no significant differences between the two conditions regarding belief in different conspiracy theories, except for “COVID-19 as a manmade bioweapon.”

These findings challenge our hypotheses and future studies should explore different measures and investigate the complex factors associated with the need for uniqueness. Indeed, it is pivotal to address the limitations of this study to improve the methodology for future studies. This may involve optimizing the manipulation of the need for uniqueness, increasing the sample size, employing different measures, or exploring additional variables to better understand the observed relationships.

Through these improvements, future studies may provide fundamental insights to better understand the hypothesized relationships between the need for uniqueness and the variables of interest.

9. Appendices

Appendix A

Table 1

Manipulation Stimulus of Both Experimental Conditions of Need for Uniqueness

High need for uniqueness	Low need for uniqueness
<p>Embracing our uniqueness and individuality is essential for personal happiness, boosting our confidence and self-esteem. Unfortunately, society encourages us all to behave, look, and think a certain way, and anything that goes against those societal norms is often challenged or ridiculed (<i>The Importance of Individuality and Uniqueness</i>, n.d.). This can make us feel left out, or that it's simply easier to follow everyone else (<i>The Importance of Individuality and Uniqueness</i>, n.d.). Although circumstances like this make it hard to stay true to ourselves, if we don't, only our happiness will suffer (<i>The Importance of Individuality and Uniqueness</i>, n.d.). Staying true to yourself and doing what makes sense to you allows you to feel as if you truly matter, and that only highlights your power to positively change the world! Celebrate your uniqueness.</p>	<p>Collectivism and shared meaning are part of the basic goals of self-concern and concern for others, which are essential in our lives and society (<i>Thinking Like a Social Psychologist About Conformity</i>, n.d.). It helps us do better by allowing us to make more accurate, moral, and informed decisions, and conformity helps us be accepted by those we care about (<i>Thinking Like a Social Psychologist About Conformity</i>, n.d.). Humans are social beings — and for the sake of a more inclusive, tolerant, and collectivistic world, we are evolutionarily driven to fit in (“Conformity,” 2020). It is crucial to adapt to our social groups and to society, especially when deciding how to think and behave based on widely accepted social norms (“Conformity,” 2020). In this manner, we are gifted with a sense of belonging, caring for others, having group identity, and encouraging others to adhere to moral standards by doing what is right.</p>

Note. Participants were not able to see the in-text citations, the sources inside the parentheses.

Appendix B

Conspiracy theory for both experimental conditions

COVID-19 is a man-made bioweapon

Many have claimed that the new coronavirus (COVID-19) has not evolved by natural mutation but has been intentionally manufactured and purposefully spread as a biological weapon for political or economic gains of specific governments and countries around the world (*COVID: Top 10 Current Conspiracy Theories - Alliance for Science, 2020*), (*Investigating the Most Convincing COVID-19 Conspiracy Theories, n.d.*). These claims were further fueled by the Trump administration accusing the Chinese government, and with Chinese officials accusing the United States (US) military (*COVID: Top 10 Current Conspiracy Theories - Alliance for Science, 2020*), (*Investigating the Most Convincing COVID-19 Conspiracy Theories, n.d.*).

The proximity between the Wuhan Institute of Virology laboratory and the Wuhan seafood market led many people to believe the virus may have escaped from the lab into the market (Imhoff & Lamberty, 2020). Palestinian media argued that COVID-19 was a biological weapon being used by the US and Israel against China and Iran (Imhoff & Lamberty, 2020).

To further add to the information chaos, concern grew as China was found to be censoring the results of research into the origins of the pandemic (Imhoff & Lamberty, 2020).

Note. Participants were not able to see the in-text citations, the sources inside the parentheses.

Appendix C

Need for Uniqueness scale (NfU) by Snyder and Fromkin (1977)

Please indicate below **the extent** to which the **following statements best describes you**.

	1. Does not describe me	2.	3.	4.	5.	6.	7. Definitely describes me
It is important that I know more information than others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important that the information I know is more unique or even rare.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have sometimes dared to be different in ways that others disapprove or even feel offended by.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In most things in life, I'd rather have certainty than take risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it difficult to work with strict rules and standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'd rather have a reputation for experimenting with new ideas than employing well-known methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I express my opinions openly, regardless of what others say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix D

Self-Attributed Need for Uniqueness (SANU) scale Lynn and Harris (1997)

DV: Conformity

How much do you believe that pandemic guidelines and recommendations are **effective in preventing** community mass spreading and halting the spread of the COVID-19 virus?

1. Not effective 2. 3. 4. 5. 6. 7. Extremely effective

To what extent are you **concerned about the negative consequences**, for instance monetary fines or even imprisonment, **of not complying** with pandemic guidelines and recommendations?

1. Not concerned 2. 3. 4. 5. 6. 7. Extremely concerned

DV: Vaccine hesitancy

Anti-vaccine beliefs, vaccine hesitancy, and misinformation have never been more prevalent, posing a major threat to public health during the COVID-19 pandemic. The World Health Organization (WHO) has labeled the increasing amount of misinformation during the pandemic an *"infodemic"*.

Imagine **you didn't have any information** on the **COVID-19 vaccine** and you were offered to get a **COVID-19 vaccine shot** in the upcoming week. Do you **intend** to take the **vaccine shot**?

1. Do not intend 2. 3. 4. 5. 6. 7. Definitely intend

If you had to take more doses of the **COVID-19 vaccine** by next winter for instance, please indicate **how many vaccine doses** you would be **willing** to take.

- I would not take any shots of the vaccine One shot Two shots Three shots As many shots as necessary

Appendix F

Control measures

Appendix H

Demographics

Demographics

What is your age group?

- Under 18 Years
- 18-30 Years
- 31-50 Years
- 51 and above

What is the highest level of education that you have completed?

- Less than a high school diploma
- High school diploma or equivalent degree
- Bachelor's degree
- Master's degree
- Doctorate degree
- No degree

What is your gender?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

What is your current main occupation?

- Full-time employment
- Part-time employment
- Self-employed
- Working student
- Student
- Retired
- Unemployed

Appendix I

Full survey transcript showing both experimental conditions

Introduction

Thank you for participating in our survey. We appreciate your time and support with my Master's Thesis!

Our aim is to explore people's risk perceptions on the impact of the COVID-19 pandemic.

This survey takes approximately 7 minutes to complete and participation is voluntary. No personal information will be collected and responses will remain anonymous.

Please click the next button to get started!

You will be presented with two texts and you will be asked questions, so please read the texts and questions carefully. Remember that there are no right or wrong answers. Let's get started!

Stimulus High Need for Uniqueness

Please read the following text very carefully.

Embracing our **uniqueness and individuality** is essential for personal **happiness, boosting our confidence and self-esteem**.

Unfortunately, society encourages us all to **behave, look, and think a certain way**, and anything that goes against those societal norms is often **challenged or ridiculed**. This can make us feel left out, or that it's **simply easier to follow everyone else**. Although circumstances like this make it hard to stay true to ourselves, if we don't, **only our happiness will suffer**.

Staying true to yourself and doing what makes sense to you allows you to feel as if you truly matter, and that only highlights your power to positively change the world! **Celebrate your uniqueness**.

Stimulus Low Need for Uniqueness

Please read the following text very carefully.

Collectivism and shared meaning are part of the basic goals of self-concern and concern for others, which are essential in our lives and society.

It helps us do better by allowing us make **more accurate, moral, and informed decisions**, and conformity **helps us be accepted by those we care about**. Humans are social beings — and for the sake of a more **inclusive, tolerant, and collectivistic world**, we are **evolutionarily driven to fit in**.

It is crucial to adapt to our social groups and to society, especially when deciding how to think and behave based on widely accepted social norms. In this manner, we are gifted with **a sense of belonging**, caring for others, having group identity, and encouraging others to adhere to moral standards by doing what is right.

DV: Vaccine hesitancy

Anti-vaccine beliefs, vaccine hesitancy, and misinformation have never been more prevalent, posing a major threat to public health during the COVID-19 pandemic. The World Health Organization (WHO) has labeled the increasing amount of misinformation during the pandemic an *"infodemic"*.

Imagine **you didn't have any information** on the **COVID-19 vaccine** and you were offered to get a **COVID-19 vaccine shot** in the upcoming week. Do you **intend** to take the **vaccine shot**?

1. Do not intend 2. 3. 4. 5. 6. 7. Definitely intend

If you had to take more doses of the **COVID-19 vaccine** by next winter for instance, please indicate **how many vaccine doses** you would be **willing** to take.

- I would not take any shots of the vaccine One shot Two shots Three shots As many shots as necessary

Control

Have you ever **contracted COVID-19**? If yes, please indicate the **severity of your symptoms** below.

- Symptoms were extremely severe (intubation, need of ventilator, spending at least one night in the hospital) Symptoms were severe (visiting the doctor's office or emergency services) Symptoms were mild No symptoms at all I have never contracted COVID-19

Do you, a family member, or a loved one work in the **healthcare sector**?

- Yes No

If you chose "Yes" in the previous question, please clarify in which area of the healthcare sector.

Demographics

What is your age group?

- Under 18 Years
- 18-30 Years
- 31-50 Years
- 51 and above

What is the highest level of education that you have completed?

- Less than a high school diploma
- High school diploma or equivalent degree
- Bachelor's degree
- Master's degree
- Doctorate degree
- No degree

What is your gender?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

What is your current main occupation?

- Full-time employment
- Part-time employment
- Self-employed
- Working student
- Student
- Retired
- Unemployed

Note. Participants were not able to see the titles before the different question blocks and were only presented one stimulus of need for uniqueness.

Appendix J**Table 2**

*Descriptive Statistics by Experimental Condition to Compare Means of Control Variables
“Control_symptoms”, “Control_healthcaresector”, and “Control_healthcarearea”*

Need for uniqueness		Symptoms	Healthcare sector	Healthcare area
1	Mean	3.28	1.63	
	N	32	32	32
	Std. Deviation	.77	.49	
	Minimum	2	1	0
	Maximum	5	2	5
	Variance	.60	.24	
	Median	3	2	
0	Mean	3.22	1.62	
	N	32	32	34
	Std. Deviation	.98	.49	
	Minimum	1	1	0
	Maximum	5	2	7
	Variance	.95	.24	
	Median	3	2	

Note. 1 = High need for uniqueness; 0 = Low need for uniqueness

Appendix K

Table 3

Regression Coefficients of the Variable Measuring for Need for Uniqueness Based on the SANU Scale “Average_SANU” on the Dependent Variables

Dependent Variable	Unstandardized B	Sig.

Average_intention	-.179	.180
Conspiracy_belief	.081	.576
Average_conspiracybelief	.064	.506
Concern_others	-.171	.158
Conformity	-.67	.592
Concern_consequences	.152	.300
Vaccine_hesitancy	-.227	.179
Vaccine_hesitancy	-.120	.320

Note. Predictors: (Constant), Average_SANU

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