

Ideology and adherence to COVID-19 guidelines: a new perspective on the classic theories?

By

Amy Elaine Hannah Marie Bendall

P145497

School of Psychology
Faculty of Education and Communities
University of Wales Trinity Saint David
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This dissertation in psychology is presented in partial fulfilment of the requirements for the degree of Master of Science in Applied Social and Health Psychology.

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Table of Contents

Declaration	ii
Acknowledgements	iii
Table of contents	iv
List of tables	v
Chapter 1: Executive Summary	1
1.1 Background	1
1.2 Purpose	1
1.3 Method	1
1.4 Overview of findings	2
1.5 Recommendations	2
Chapter 2: Systematic Literature Review	3
2.1 Abstract	3
2.2 Paragraph of context	4
2.3 Aims	6
2.4 Method	7
2.4.1 Search strategy	7
2.4.2 Review process	8
2.4.3 Quality Assessment of studies	8
2.5 Results	9
2.5.1 Overview of studies	9
2.5.2 Psychological factors associated with non-adherence	11
2.5.3 Recommendations	12
2.6 Discussion	15
2.7 Limitations	18
Chapter 3: Research Paper	20
3.1 Abstract	21
3.2 Introduction	22
3.3 Method	26
3.3.1 Participants	26
3.3.2 Design	27
3.3.3 Materials	28
3.3.4 Procedure	30
3.4 Results	31
3.4.1 Regression Analysis	31
3.4.2 Exploratory Analysis	32
3.5 Discussion	33
3.5.1 Main Findings	33

3.5.2 Methodological considerations.....	35
3.5.3 Conclusion.....	37
Chapter 4: Reflective Chapter	39
References.....	46
Appendix A – JBI Appraisal Checklist.....	53
Appendix B – Information and consent form.....	54
Appendix C – ACT scale.....	55
Appendix D – SDO7 scale.....	59
Appendix E – LWAI scale.....	62
Appendix F – Adherence scale.....	66
Appendix G – Debrief form.....	69
Appendix H - Research Proposal.....	70
Appendix I - Ethical approval form.....	78

List of tables

Table 1: Components and search terms used for the database searches.....	7
Table 2: Quality Assessment of studies.....	9
Table 3: Descriptive statistics for participant age group.....	27
Table 4: Descriptive statistics for participant total scale scores.....	31

Chapter 1 – Executive Summary

1.1 Background

During the recent COVID-19 pandemic, non-pharmaceutical interventions (NPIs) were introduced worldwide to help slow the spread of the coronavirus. Despite this, evidence shows that many people choose not to comply with these guidelines, putting themselves and others at risk. This issue is inherently politically linked, and therefore, is of great interest to socio-psychological researchers. Numerous studies have explored the issue of COVID-19 non-adherence from a variety of perspectives, but rarely from a purely ideological standpoint. It is argued that doing so would deepen the current understandings about how ideological attitudes alone can predict non-adherence phenomena and could also contribute to informing future behaviour change initiatives.

1.2 Purpose

Following a systematic review of the current research, this study aimed to close a gap in the existing literature. It was conducted in order to measure individual levels of right-wing authoritarianism, social dominance orientation and left-wing authoritarianism, and explore the predictive power of these constructs towards non-adherence to COVID-19 NPIs. A secondary purpose of the study was to contribute to the emerging conversation surrounding the concept of LWA, and to explore its efficacy as a valid measure of an existing attitude.

1.3 Method

Data were collected via the online survey software Qualtrics. The study utilised three established and pre-appraised scales to measure levels of RWA, SDO and LWA, and one researcher-created measurement of non-adherence behaviours. The dataset was downloaded to the software programme SPSS and a multiple regression analysis was conducted. Exploratory analyses were also conducted to investigate relationships between demographic variables and the four psychological constructs. These included a number of one-way ANOVA analyses and two independent samples t-tests.

1.4 Overview of findings

It was discovered that a model combining the three ideological constructs could significantly predict 11% of the variance in COVID-19 non-adherence behaviour. This supports the current consensus of the importance of these ideological factors in health behaviour motivation. Interestingly however, further analyses found no correlation between RWA and adherence individually, SDO correlated with non-adherence, and LWA correlated with adherence. These results suggest that authoritarian beliefs supporting liberal ideals are related to positive health behaviour, and that beliefs in social hierarchies are related to negative health behaviour. A link was also uncovered between LWA and age, allowing for contemplation about how health behaviours could change in the future.

1.5 Recommendations

This study concluded that further examination of the relationship between SDO and LWA, excluding RWA, could provide a contemporary insight into how and why these constructs contrarily predict adherence. Also, this study adds just one more voice to a growing body of literature supporting the emergence of liberal authoritarianism and it is argued that in the wake of the pandemic, societal beliefs and behaviours could also change in unexpected ways. It is therefore proposed that LWA not be wholly dismissed just yet. It is recommended that future researchers incorporate the construct of LWA into their investigations, in order to maintain the applicability of psychological knowledge to public health.

Chapter 2 – Systematic Literature Review

2.1 Abstract

The global nature of the recent COVID-19 pandemic has necessitated widespread governmental interventions aimed at reducing the spread of the virus and lowering the death/infection rates (Our World in Data, 2021; Porcher, 2020). However, evidence shows that adherence to these interventions has not been as prevalent as hoped (Atchison et al, 2020; Nivette et al, 2021; Smith et al, 2021). The purpose of this review was to synthesise the existing psychological literature and to a) examine the current psychological explanations of non-adherence and b) identify the most relevant and promising recommendations for improving adherence with COVID-19 safety measures. There were 13 studies ultimately included in this review (Bailey et al, 2021; Bogg & Milad, 2020; Brosowsky et al, 2021; Choma et al, 2021; Clarke et al, 2021; Dixon et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tang et al, 2020; Tong, 2020; Tunçgenç et al, 2021; Wolff et al, 2020), all of which utilised quantitative data collection and data analysis methods and all of which were conducted since the onset of the pandemic in March 2020. The results of the review showed that a sudden influx of research has led to a wide variance in explanations for non-adherence, mostly involving socio-psychological concepts such as personality constructs (Bailey et al, 2021, Krupić et al, 2021), boredom proneness (Brosowsky et al, 2021; Wolff et al, 2020) and political attitudes (Choma et al, 2021; Clarke et al, 2021; Manson, 2020). This review highlights a need to streamline the current research surge and focus in on the ideological aspects of non-adherence behaviour. While the studies in this review provide a sound basis for the consequent suggestions of the author, limitations and issues of the review are also recognised.

2.2 Paragraph of context

On December 31st, 2019, news of a cluster of “viral pneumonia” cases was reported in Wuhan, China (World Health Organisation [WHO], 2020). This situation escalated during the early months of 2020, with the World Health Organisation declaring the outbreak of this virus as a public health emergency on January 30th, 2020, and eventually labelling it a global pandemic on March 11th, 2020 (WHO, 2020). COVID-19 is a disease caused by a newly discovered strain of coronavirus (SARS-CoV-2), which can cause respiratory illness, fever, cough, and fatigue (Gov.uk, 2021a). COVID-19 can spread rapidly from person-to-person and is transmitted via airborne droplets of mucous or saliva which contain the infectious pathogens (Gov.uk, 2021a). The virus itself attacks the lungs and respiratory system, causing the human body to react to this invasion by producing cytokines, which should be able to clear the virus and create antibodies (Hu et al, 2021). However, in cases of COVID-19, this “cytokine storm” is not as effective and continues to respond to the virus for too long, and too strongly. This can lead to the formation of clots, damage to the heart and damage to the kidneys, which is believed to be a leading cause of the deaths attributed to COVID-19 (Hu et al, 2021). Longer term effects of COVID-19 are not yet fully known, and the disease is particularly dangerous for older adults and individuals with underlying health conditions such as high blood pressure, heart/lung problems, diabetes, and cancer, as their immune responses are already more compromised than those of healthier people (Centers for Disease Control and Prevention [CDC], 2021). At the time of writing, the worldwide effects of COVID-19 currently stand at 179 million cases of confirmed infection, and a total of 3.89 million deaths (WHO, 2021).

Although this figure is disheartening, it can be argued that given the highly infectious nature of COVID-19, further devastation and death has been somewhat mitigated by the

governmental responses to the virus, and the protective measures that have been implemented to prevent the spread of the disease. Following guidance from scientists and researchers at the World Health Organisation, governments worldwide brought in new policies intended to protect their populations (Our World in Data, 2021; Porcher, 2020). These measures have included country-wide lockdown orders, the introduction of COVID-19 tracking systems, widespread work-from-home adaptations, and the redirection of funding to support the changing structures of society (Our World in Data, 2021; Porcher, 2020). In addition to this, the general public were also asked to contribute to keeping themselves and others safe by following behavioural guidelines set out by their governments. These included socially distancing from others, wearing face coverings in public, using stringent hygiene practices, and avoiding travel where possible (Our World in Data, 2021; Porcher, 2020).

Unfortunately, a surge of research has shown that adherence to these guidelines is far from universal. A recent UK census revealed that 45.2% of respondents were willing to obey the social distancing regulations (Atchison et al, 2020). Also, studies have found that adherence to COVID-19 track and trace systems are only around 42.5% (Smith et al, 2021), 92.8% of people were willing to adhere to some rules, but not others (Hills & Eraso, 2021) and that hygiene-focused preventative measures are the most likely to be ignored (Nivette et al, 2021). These few studies are just a small example of a wide body of research recognising the issue of individual non-adherence to COVID-19 guidelines, which raises the question of *why* people are not complying with these life-saving measures.

The field of psychology has risen to the challenge of answering this question and there has been an influx of research surrounding non-adherence, and the possible factors associated with non-compliance with COVID-19 restrictions in particular. It is recognised that concepts such as individual personality traits, health beliefs and political ideologies could be influencing factors of non-adherence, and that it is important to consider sociological

context when exploring an issue that has affected people around the globe (British Psychological Society [BPS], 2021). Gaining a deeper understanding of this behavioural phenomenon could lead to improvements in promoting health in the future, via improving uptake of and adherence to behavioural change initiatives.

Therefore, the purpose of this literature review is to identify the most current, relevant, and credible research explaining the psychological factors associated with non-adherence to COVID-19 guidelines, and to identify what can be done to mitigate the ill-effects of this behaviour.

2.3 Aims

Two specific aims have been defined for this literature review to focus on:

1. What psychological factors are thought to be associated with/to predict non-adherence to COVID-19 guidelines?
2. What recommendations are being made to improve and/or change health behaviours, based on the current literature?

These aims have been developed to address pertinent questions surrounding the COVID-19 global pandemic response.

2.4 Method

2.4.1 Search strategy

In order to collect relevant literature in line with the aims of this review, a systematic process was implemented using several electronic databases. These were: ProQuest, ProQuest Central, Science Direct, EBSCO Host, Springer, APA PsychArticles, Medline, BMJ Open and Wiley Online. In addition to this, the reference lists of all of the included papers were searched in order to identify further relevant publications.

The search was limited to papers published from December 2019 onwards, to ensure that no studies undertaken before the COVID-19 pandemic were included. The initial search consisted of a combination of key terms, and their respective synonyms and/or abbreviations (see table 1).

Table 1

Components and search terms used for the database searches

Components	Search terms
COVID-19	COVID-19, Covid, Coronavirus, pandemic, virus
Adherence	Adherence, non-adherence, compliance, non-compliance, response, behaviour, action
Guidelines	Guidelines, regulations, rules, interventions, restrictions, prevention, measures
Psychological concepts	Psychology, psychological, underpinning, association, understanding, reason, predictor, ideology, model

Note: All the search terms were combined with 'OR' as well as 'AND' when searching for literature

2.4.2 Review process

Using the search strategy outlined above, 275 papers were returned. From this number duplicate papers were removed, as were articles that were not peer-reviewed. This left 175 articles. From this number, the abstracts of the articles were reviewed and excluded if they did not answer the aims of the current review, leaving 52 papers.

These 52 papers were then examined according to the inclusion criteria: (1) studies which had undertaken primary research (either qualitative or quantitative) (2) articles reporting a psychological explanation of non-adherence to COVID-19 guidelines, (3) articles produced after December 2019, (4) articles written in English (but undertaken in any COVID-19 affected country, (5) articles that explored a range of adherence behaviours, rather than just one specific COVID-19 non-adherence behaviour. Following this process, 19 articles were remaining.

2.4.3 Quality assessment of studies

In order to critically assess the validity, robustness, and potential bias of the remaining studies, the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (Joanna Briggs Institute, 2017) was applied to each paper. This tool was developed by a collaboration of researchers and approved by the JBI Scientific Committee in 2017. The appraisal criterion are eight questions designed to evaluate the methodological strength of the study and therefore, its ability to be considered a valid and/or scientific contribution to the literature (Appendix A).

The papers ultimately included in this review were all published during the 14-month period between March 2020 and May 2021. Eleven of the studies were carried out as online surveys (Bailey et al, 2021; Bogg & Milad, 2020; Brosowsky et al, 2021; Choma et al, 2021; Clarke et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tang et al, 2020; Tunçgenç et al, 2021; Wolff et al, 2020), with the remaining two studies being conducted as telephone interviews (Dixon et al, 2021; Tong et al, 2020). Due to the nature of online research, it is more pertinent to report the locations of the participant samples than that of the researchers. Five of the studies were conducted using participants within the United States of America (Bailey et al, 2021; Bogg & Milad, 2020; Brosowsky et al, 2021; Manson, 2020; Wolff et al, 2020), two of the studies were conducted using participants within China (Tang et al, 2020; Tong et al, 2020), one study utilised participants in Canada (Gouin et al, 2021), one study utilised participants in Croatia (Krupić et al, 2021), one study utilised participants in Australia (Clarke et al, 2021) and one study utilised participants in Scotland (Dixon et al, 2021). Of the final two studies, one collected data from the UK, USA, and Canada simultaneously (Choma et al, 2021), and the final study collected data from the UK, Germany, France, and Turkey simultaneously (Tunçgenç et al, 2021).

All of the studies employed quantitative methods of analysis. Nine studies used regression analyses to explore the psychological factors that could predict non-adherence (Bailey et al, 2021; Choma et al, 2021; Clarke et al, 2021; Dixon et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tang et al, 2020; Tunçgenç et al, 2021), two studies looked at psychological factors related to non-adherence using correlation analyses (Bogg & Milad, 2020; Tong et al, 2020), one study used both correlations and regression analyses (Brosowsky et al, 2021), and one study used correlations, regression, and structural equation modelling (Wolff et al, 2020). Possibly due to the fact that the majority of the global population has been affected in some way by COVID-19, 11 of the studies used quota

sampling methods to recruit participants (Bogg & Milad, 2020; Brosowsky et al, 2021; Choma et al, 2021; Clarke et al, 2021; Dixon et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tong et al, 2020; Tunçgenç et al, 2021; Wolff et al, 2020), and two studies used convenience sampling (Bailey et al, 2021; Tang et al, 2020). The smallest sample group was 500 participants, which three studies utilised (Bogg & Milad, 2020; Dixon et al 2021; Manson, 2020), and the largest sample group was 6,675 participants (Tunçgenç et al, 2021). All of the studies' participants were 18 years old or above and all studies included both male and female participants.

2.5.2 Psychological factors associated with non-adherence to COVID-19 guidelines.

All of the studies addressed this question, with two studies looking how a psychological concept is simply related to non-adherence (Bogg & Milad, 2020; Tong et al, 2020), and 11 studies exploring how well certain psychological factors can predict non-adherence behaviour (Bailey et al, 2021; Brosowsky et al, 2021; Choma et al, 2021; Clarke et al, 2021; Dixon et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tang et al, 2020; Tunçgenç et al, 2021; Wolff et al, 2020).

The study by Tong et al (2020) was unique in exploring how five constructs of the Health Belief Model (HBM, Strecher & Rosenstock, 1997) could be related to COVID-19 non-adherence behaviour, and the study by Dixon et al (2021) was the only included paper that looked at how the Common-Sense Model of Self-Regulation (CSM, Leventhal et al, 1980) could explain COVID-19 non-adherence. The study by Bailey et al (2021) focused on how mental health challenges and coping strategies can predict non-adherence, similarly to Tang et al (2020), who combined their interest in coping mechanisms with an exploration of

how the perceived threat of COVID-19 affects non-adherence. Bogg & Milad (2020) shared an interest with Dixon et al (2021) who both conducted studies using constructs of the Theory of Planned Behaviour (Ajzen, 1991) as predictor variables or correlates of non-adherence . Gouin et al (2021) also looked at one of the constructs of the TPB (perceived social norms) and combined this with the concept of emotional distress to attempt to explain non-adherence behaviours. Bailey et al (2021) and Krupić et al (2021) both highlighted links between the Big Five personality traits (McCrae & Costa, 2003) and non-adherence behaviours in their articles, while Brosowsky et al (2021) and Wolff et al (2020) both explored the predictive value of boredom proneness (Harris, 2000) in the current context. Choma et al (2021) analysed how perceived personal risk of COVID-19 itself affected non-adherence, in a similar vein to Tunçgenç et al (2021) who looked at participants' perceived vulnerability to the virus, alongside participants' perceived adherence levels of their social circles. Choma et al (2021)'s study also examined how much the Social Dominance Orientation model (SDO, Sidanius & Pratto, 1999) can predict non-adherence behaviours. This avenue, exploring the socio-political factors associated with COVID-19 guideline adherence, was also followed by Clarke et al (2021), who investigated both SDO (Sidanius & Pratto, 1999) and Right-Wing Authoritarianism (RWA, Altemeyer, 1981) as possible predictors. Finally, Manson (2020) also measured RWA (Altemeyer, 1981), alongside the concept of Left-Wing Authoritarianism (Costello et al, 2020) in his study.

2.5.3 Recommendations aimed at improving/changing health behaviour

As can be expected, the various findings of the included papers covered a broad range of recommendations for both health policy initiatives and future research directions. In exploring how proneness to boredom can predict non-adherence, Brosowsky et al, (2021)

concludes that upcoming behaviour change policies should focus more on what individuals *can* do, rather than focusing on the restrictive aspect of the current situation. Brosowsky et al (2021) also found significant divides in adherence between socio-economic class in their sample and recommend that future research explore this phenomenon from a socio-political standpoint. Also exploring boredom proneness and its effects on adherence, Wolff et al (2020) argue that governments should highlight opportunities to contribute to the “greater good” to the public in order to improve uptake of health-positive behaviours. For future research directions, Wolff et al (2021) suggest that an objective measure of adherence-non-adherence behaviours is formulated, to improve validity across studies. It is also proposed that studies exploring the cross-cultural and socio-psychological factors of adherence to COVID-19 guidelines should be conducted, in order to strengthen the links between various theoretical understandings of the COVID-19-related behaviour (Wolff et al, 2021). The study conducted by Tang et al (2020) agreed with this recommendation, also concluding that future research should focus on collecting more cross-cultural, global data, and suggesting that practical changes to policy should include introducing positive reinforcements to individuals who do comply with COVID-19 regulations (Tang et al, 2020).

Direct governmental communication with the public is also recognised as a key factor for targeting behaviour change in six more of the studies (Bailey et al, 2021; Bogg & Milad, 2020; Choma et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Tunçgenç et al, 2021). Bailey et al (2021) proposes that governments should make it a priority to continually correct misinformation, in order to improve adherence behaviours. This study further suggests that future research should explore the impact of behavioural skill interventions on adherence (Bailey et al, 2021). Another way for governments to improve adherence according to Bogg and Milad (2020) is to promote a perceived social contract among the people, instigating an unspoken expectation of adherence among communities and social groups. Choma et al

(2021)'s findings support this suggestion, with their study concluding with a recommendation that collective action is encouraged through the dissemination of targeted literature to the public. This paper also recommends that further studies on the topic of COVID-19 adherence would benefit from exploring a wider range of adherence behaviours, and to include exploration into the socio-political factors effecting this phenomenon (Choma et al, 2021). In a similar vein, Gouin et al (2021) established that initiatives highlighting adherence as a social norm, that everyone subscribes to, could increase compliance. Krupić et al (2021) agree, further proposing that establishing goal-setting tasks on a societal scale would improve cohesion amongst those who adhere to that social norm. Finally, Tunçgenç et al (2021) recommends that governments should encourage the public themselves to encourage adherence, by promoting and incentivising the COVID-19 guidelines amongst their own family and peers.

Some included studies did not put forth recommendations for future societal actions, instead focusing solely on the importance and the direction of future research (Clarke et al, 2021; Dixon et al, 2021; Manson, 2020; Tong et al, 2020). Dixon et al (2021) recognised that the model explored in their paper could be applied to the issue of increasing vaccine hesitancy among the public, whilst the other three papers independently reached the same conclusion as each other. Clarke et al (2021), Manson (2020), and Tong et al (2020) made convincing arguments that the future direction of psychological research should focus on the ideological underpinnings of non-adherence behaviour, from a socio-psychological perspective. Tong et al (2020) surmised that health belief models cannot fully explain adherence behaviours and suggest that exploring socio-political values could be a more fruitful avenue of investigation. Clarke et al (2021) note that there has been a distinct shift in authoritarian values from the typical political “right,” to the typical political “left,” and calls for deeper exploration into the mechanisms underlying this shift. Further along that same

direction, Manson (2020)'s study incorporated the measurement of an emerging psychological concept, "Left-Wing Authoritarianism" (LWA, Costello et al, 2020). Manson (2020)'s study found that LWA was a significant indicator of non-adherence behaviour and speaks to the potential value of exploring this promising theory in future research.

2.6 Discussion

As previously mentioned, there has been a sudden explosion of research surrounding the unprecedented COVID-19 pandemic, which could be a contributing factor to the wide array of opinion and research directions shown in the literature. The studies in this review covered a large variety of psychological concepts and theories, with only a few overlapping theories between articles. The majority of the papers were undertaken on a broad scope, looking at a number of factors simultaneously (Bailey et al, 2021; Bogg & Milad, 2020; Brosowsky et al, 2021; Choma et al, 2021; Clarke et al, 2021; Dixon et al, 2021; Gouin et al, 2021; Krupić et al, 2021; Manson, 2020; Tang et al, 2020; Wolff et al, 2020), therefore it seems pertinent to begin to amalgamate the current offerings and move forward in a focused way.

Two of the included studies concluded with a recommendation that there is need for further research across multiple countries (Tang et al, 2020; Wolff et al, 2020). However, considering the diversity of the articles included in just this review, that seems to be moot point. The pandemic that necessitated this research boom is an ongoing global concern, and it is evident that studies are being conducted and disseminated across the world. Therefore, it could be said that continuing research within smaller populations, or within singular countries is still an appropriate mechanism for gaining valuable data.

Secondly, it is important to note that some studies included recommendations for policy implementation or other government action (Bogg & Milad, 2020; Gouin et al, 2021; Krupić et al, 2021) and some included only recommendations for further research (Clarke et al, 2021; Dixon et al, 2021; Manson, 2020; Tong et al, 2020),. This is a common facet of academic literature, but it might be said that in order for psychologists to be able to incite positive change, more consideration should be given to what can be tangibly achieved from the findings of a study.

Some of the papers which did offer a mechanism for societal behaviour change did so with a caveat that the ever-changing nature of this unprecedented pandemic could reduce the applicability of their findings (Bailey et al, 2021; Bogg & Milad, 2020; Dixon et al, 2021; Gouin et al, 2021; Tunçgenç et al, 2021). Therefore, exploring fluctuating concepts such as perceived threat of the virus, coping mechanisms, mental health etc. might produce results that lose validity over time. It could be argued then, that future research would benefit from exploring non-adherence based on more stable, enduring psychological traits.

The studies conducted within seven of the articles did look at psychological concepts that are considered more fixed or permanent, namely, personality (Bailey et al, 2021, Krupić et al, 2021), boredom proneness (Brosowsky et al, 2021; Wolff et al, 2020), and political ideology (Choma et al, 2021; Clarke et al, 2021; Manson 2020). While the concepts of personality and boredom proneness both appeared to be good predictors of people's non-adherence decisions, the authors of those papers unanimously purported that further exploration of political ideologies would be a logical and fruitful direction for future study (Bailey et al, 2021; Brosowsky et al, 2021; Krupić et al, 2021; Wolff et al, 2020). This recommendation was echoed by Tong et al (2020).

Of the articles that did look at political ideology, it could be argued that this was done in a relatively piecemeal way. The study by Choma et al (2021) explored SDO (Sidanius & Pratto, 1999), Clarke et al (2021) looked at both RWA (Altemeyer, 1981) and SDO (Sidanius & Pratto, 1999), and Manson (2020) investigated RWA (Altemeyer, 1999) alongside LWA (Costello et al, 2020). Perhaps further research encompassing all three of these psychological concepts could provide an even more valid model explaining non-adherence behaviours. The recommendations from these three papers also endorse the need for more cohesive research exploring political ideology and its effects on non-adherence behaviour.

In summation, non-adherence to government-mandated COVID-19 guidelines is of ongoing concern, and it seems obvious that in a time of governmental unease, individuals' political affiliations and ideologies will play a role in their decision-making. In agreeance with this assumption, the current literature suggests that the strongest psychological concepts linked to non-adherence appear to be individuals' levels of RWA (Altemeyer, 1981), SDO (Sidanius & Pratto, 1999) and LWA (Costello et al, 2020). As has been shown, although many of the included papers suggested this direction for research, none examined all three of these psychological concepts together, as a measure of how they interact with each other and with non-adherence behaviour. This could be an important step in collating the knowledge needed to implement effective, positive changes to health behaviours in modern society.

7 Limitations

This review has succeeded in exploring the current literature base concerning COVID-19 guideline non-adherence. The aims of this review were met, however there are a number of limitations of this review that it is appropriate to consider.

Firstly, this review included a disproportionate number of studies that were conducted on a sample of USA-based participants. Five of the studies used a sample consisting only of people residing in the USA (Bailey et al, 2021; Bogg & Milad, 2020; Brosowsky et al, 2021; Manson, 2020; Wolff et al, 2020), and one study included USA-based participants alongside participants from the UK and Canada (Choma et al, 2021), meaning that almost half of the studies were conducted within one particular group. Even given the diverse nature of America as a country, it could be said that the papers in this review include an over-representation of USA-citizens, thereby reducing the generalisability of the results to a wider population. This limitation could be arguably somewhat mitigated by the saturation of current worldwide research but is still an important consideration within the current review.

Secondly, all of the papers included in this review were research studies undertaken using quantitative methods of data analysis. It could be said that given the recent the need to collate and synthesise a large amount of information about COVID-19 adherence, quantitative procedures are inevitably going to be the main methods currently being used in practice. Nevertheless, the importance of qualitative study cannot be understated, and while there are less qualitative studies available to review, they could still provide valuable and relevant information regarding COVID-19 non-adherence. Therefore, the absence of qualitative studies within this review is a consideration to be aware of.

Another possible limitation of this review is the homogeneity of the specific data collection methods used. Almost all of the included studies were conducted via online survey

completion, with just two studies being conducted as telephone interviews. The recent inundation of online research is likely at least somewhat attributable to the pandemic, with people not able to meet face-to-face, and therefore, not able to conduct lab-based study. However, respondent bias may have been mitigated slightly by the fact that participants could take part while sitting in their own homes, under less pressure than in a laboratory. Also, as the restrictions are lifted, it is likely that more experimental studies will be conducted, strengthening the conclusions that have been reached using just online methods.

Finally, it must be acknowledged that the current review was conducted by a single individual and therefore the possibility of researcher bias is present. This review was completed as part of a Masters dissertation paper and was therefore unavoidably an individual undertaking, however it must be noted that the author does have substantial previous experience conducting literature reviews and conducted this current review under the supervision of a doctoral-level social psychologist.

Chapter 3 – Research Paper

Ideology and adherence to COVID-19 guidelines: a new perspective on the classic theories?

This manuscript has been written with intent to submit to the European Journal of Social Psychology, following the journals specific instructions to authors.

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Data availability statement

Data collected during this study is stored on the Qualtrics database and is accessible only by the researcher and research supervisors using password protections.

Conflict of interest disclosure

The research team declares no conflict of interest

Ethics Approval statement

This research was conducted following the obtainment of ethical approval from the University of Wales Trinity Saint David's research ethics committee, in Swansea, South Wales.

Participant consent statement

No data was collected during this study prior to collecting informed consent from each participant via an online information form and a tick box to indicate consent.

3.1 Abstract

The ongoing global COVID-19 pandemic has given rise to the implementation of government mandated non-pharmaceutical interventions. Recent research shows however, that the uptake of these NPIs is not universal (Bayram & Shields, 2021; Brauner et al, 2021; Grossman et al, 2020; Smith et al, 2021). Psychological explanations for this issue have been explored thoroughly by researchers, but rarely from a purely socio-ideological perspective. This study aimed to remedy this omission by looking at the influence of right-wing authoritarianism and social dominance orientation on COVID-19 NPI non-adherence. It is also noted that the concept of left-wing authoritarianism is re-emerging within current literature (Clarke et al, 2021; Conway et al, 2018; Costello et al, 2020; Fasce & Avendaño, 2020; Manson, 2020; Phillips & Yi, 2018; Rothgerber et al, 2020; Stubbs & Lendvai-Bainton, 2020) and in the interest of conducting a rigorous and fair investigation, the measurement of LWA was also included in the study design. A secondary objective of the study was to provide evidence or argument regarding the existence and efficacy of LWA as a psychological construct. Eighty-five participants were recruited via online advertisement to take part in a Qualtrics study consisting of four questionnaires. The results of a multiple regression analysis showed that a model combining RWA, SDO and LWA can predict 11% of COVID-19 NPI non-adherence behaviours. Further analyses suggested that RWA was not correlated individually with adherence behaviours, SDO was correlated with non-adherence, and LWA was correlated with adherence. The study concludes that the efficacy of LWA was apparent in these findings, more so than RWA, therefore, further inclusion of LWA measures in health psychology could be beneficial. It is recommended that deeper exploration into the interplay between LWA and SDO specifically could provide important insights into behavioural motivation and that the findings of the current study could be expanded upon, to inform future research and/or public health interventions in a more contemporary context.

3.2 Introduction

In light of the recent and ongoing COVID-19 global pandemic, governments across the world have had to implement a number of non-pharmaceutical interventions in order to protect the public from the coronavirus (Our World in Data, 2021; Porcher, 2020). Informed by scientists and medical professionals, legislation has been put in place mandating individual actions such as: using face coverings in public spaces, maintaining 2 metre-distances from other people, staying at home wherever possible and regularly using hand sanitiser, among others (Our World in Data, 2021; Porcher, 2020). These government guidelines have been referred to throughout the pandemic as regulations, restrictions, guidelines, rules, and other synonymic definitions (Brauner et al, 2021). For the purpose of clarity, this paper will henceforth use the term non-pharmaceutical intervention (NPI) to encompass these guidelines and their various labels.

It has become apparent within the current literature however, that there has been pushback against these NPIs, with significant numbers of people refusing to comply with them..(Atchison et al, 2020; Hills & Eraso, 2021; Nivette et al, 2021; Smith et al, 2021) or even questioning the efficacy of such measures to begin with (Bayram & Shields, 2021; Choma et al, 2021; Hromatko et al, 2021). Non-adherence to NPIs has the potential to pose a significant threat to public health, minimising the effort put in by those who do comply, and increasing the risk of infections and/or deaths (Centers for Disease Control and Prevention [CDC], 2021; World Health Organisation [WHO], 2021). It is therefore imperative that this behaviour be examined, with a view to understanding *why* people choose to not comply, and therefore how future behaviour change initiatives could improve adherence to life-saving interventions.

Fortunately, there has been an inundation of psychological studies relating to COVID-19 non-adherence, and one of the most promising directions this literature takes is the exploration of socio-ideological attitudes, and how they play a role in non-adherence with NPIs (Choma et al, 2021; Clarke et al, 2021; Manson, 2020). The issue of non-adherence to NPIs is unavoidably linked to political beliefs and attitudes, given that the guidelines are mandated by government, and these concepts have long been of interest to psychological researchers. Right-wing authoritarianism (RWA, Altemeyer, 1981) is the name given to the psychological conceptualisation of peoples' preferences for social control, conventionalism, and support for perceived legitimate social authorities. Related to this, Social Dominance Orientation (SDO, Sidanius & Pratto, 1999) is a separate but correlated construct, which encompasses peoples' beliefs about social group status and hierarchical power of said groups.

When considering the current understandings of these two concepts, it is fair to assume that individuals high in RWA would be more likely to conform to the government mandated NPIs and to engage in adherence behaviours. Also, it might be logical to assume that those high in SDO would want to engage in adherence behaviours as part of the "socially superior" group. However, research shows that during the pandemic, these widely accepted theories have manifested in interesting ways. It has been observed that individuals high in RWA are both less likely to believe in the efficacy of NPIs (Azevedo & Jost, 2021; Sinclair et al, 2020) and less likely to engage in adherence behaviour (Choma et al, 2020; Rothgerber et al, 2020). High scores of RWA have previously been linked to anti-scientific attitudes with regards to issues such as climate change (Kerr & Wilson, 2021; Stanley et al, 2017) vaccination, fluoridation, and evolution (Kerr & Wilson, 2021). Also, high scores of SDO were found to be linked with negative attitudes towards science and scientists as a group (Kerr & Wilson, 2021). While this phenomenon is not yet fully understood, it is thought that the rejection of scientific fact is a consequence of those high in RWA perceiving science as

violating social norms, and those high in SDO perceiving scientists as threatening the hierarchical social structure (Kerr & Wilson, 2021). It could be of significant value to expand upon these findings within the contemporary social context and explore to what extent RWA and SDO can explain non-adherence to COVID-19 NPIs in specific, as the NPIs themselves are scientifically supported and recommended actions (Centers for Disease Control and Prevention [CDC], 2021; World Health Organisation [WHO], 2021).

It is recognised that this paper is not the first to explore RWA and SDO as possible predictors of COVID-19 non-adherence. However, a recent and relatively unexplored theory has also begun to emerge within the psychological literature. The concept of Left-Wing Authoritarianism is a controversial topic that has waned in popularity since the 1980's, given that there has been little radical activism necessitating the study of such a construct (Costello et al, 2021). However, in light of the COVID-19 pandemic, and possibly exacerbated by the political unease of recent years, there appears to have been an increase of authoritarian beliefs and behaviours from the more liberal or “left” side of the ideological divide (Fasce & Avendaño, 2020; Phillips & Yi, 2018; Stubbs & Lendvai-Bainton, 2020). Although there remains dissent about the existence of such a construct (Nilsson & Jost, 2020; Stone, 1980), advocates of LWA argue that the construct is simply authoritarianism in service of leftist values rather than right, and that the key differences between RWA and LWA are a) personological factors of the individual, such as their personal motivations, and b) attitudinal factors of the individual, such as their belief in conformity and self-direction (Costello et al, 2020; Conway et al, 2018). Interestingly, it has also been found that those high in LWA were significantly more likely to trust in, and strongly defend scientific opinion (Lewandowsky & Oberauer, 2021), further highlighting that RWA and LWA are associated concepts with a few specific antithetical components.

If one considers the distinct political and ideological divide that has become apparent surrounding the topic of NPI adherence (Grossman et al, 2020; Harper & Rhodes, 2020; Painter & Qiu, 2020; Powdthavee et al, 2021; Rothgerber et al 2020), a case can be made for including a measure of LWA into studies. It could be of significant benefit to further explore both the validity of this construct and its potential applicability in improving how psychologists can inform behavioural change initiatives. Also, it should be noted that many existing papers do not explore the issue of NPI non-adherence from a purely socio-political perspective, often incorporating other psychological measures into their studies, such as personality factors (Bailey et al, 2021, Krupić et al, 2021), boredom proneness (Brosowsky et al, 2021; Wolff et al, 2020), and health beliefs (Al-Sabbagh et al, 2021; Rabin & Dutra, 2021; Tong et al, 2020), to name just a few. Although these avenues of investigation are undoubtedly valuable and relevant directions for research, it could also be productive to remove these extraneous variables and look at the issue of COVID-19 non-adherence with a focus on ideological factors alone. Doing so could provide a broader and more foundational understanding of the mechanisms by which individuals are compliant or non-compliant with COVID-19 NPIs.

To conclude, it is a sad reality that global initiatives to slow the spread of coronavirus have not been embraced by everyone. Discovering the reasons for this phenomenon could improve future initiative aimed at changing health behaviours. Much research has been done within the field of psychology exploring this issue, and there are promising findings pointing in the direction of socio-ideological factors being an important contributor to non-compliance in this context. It is also notable that while there has been a large body of research conducted around COVID-19 non-adherence, there is scant evidence of studies that look at this issue exclusively from a socio-ideological standpoint, and none so far that include the relatively unexplored concept of LWA alongside other measures of socio-political attitudes.

Therefore, the aim of this current study is to a) contribute to the literature exploring the validity of LWA and b) investigate the extent to which RWA, SDO and LWA can predict non-adherence to COVID-19 NPIs, both as individual constructs and as a combined model. In order to measure the strength of possible predictive factors, a linear regression analysis is the most appropriate test to run (Brace et al, 2012). Due to the relatively restricted reach of a university dissertation project, and the need to specify which NPIs are being measured, the study will be conducted on a UK-based sample in the first instance.

3.3 Method

3.3.1 Participants

The sample used in this study consisted of 85 participants who were recruited through online advertisements of the study via the University of Wales Trinity Saint David's Twitter feed. Participants were excluded if they did not live in the United Kingdom during the pandemic, due to the adherence measure being based on the COVID-19 NPI's that were in effect in Britain at that time. Also, the study excluded participants under the age of 18. The gender split was 66 female, 18 male, and 1 non-binary participant. The majority of the participants (52.9%) were educated to college/A-level, 36.5% had a university degree or higher, 7.1% had left school at 16, and 3.5% did not report their education level. The age groups of participants are shown in Table 3.

Table 3*Descriptive statistics for participant age group*

Age group	Frequency	Percent	Cumulative Percent
18-24	23	27.1	27.1
25-34	33	38.8	65.9
35-44	13	15.3	81.2
45-54	12	14.1	95.3
55-64	2	2.4	97.6
65-74	2	2.4	100
75+	0	0	100
Total	85	100	100

3.3.2 Design

The study was a non-experimental online questionnaire design wherein participants were asked to complete four scales, and to provide some demographic information about themselves (gender, age range, level of education). In order to test the main hypotheses, a linear regression analysis was then run on the dataset using the software program Statistical Product and Service Solutions (SPSS, IBM). The data, which was collected on a continuous scale for each questionnaire, was used to create a model exploring how well the three predictor variables (levels of RWA, SDO and LWA) could explain the outcome variable (COVID-19 NPI non-adherence). Given the literature, it is hypothesised that the model will strongly predict NPI non-adherence. The regression analysis will also measure the strength of

the relationship between each individual predictor variable and the dependent variable, to perhaps gauge the equivalent validity of LWA, compared to RWA and SDO.

3.3.3 Materials

All data for this study were collected online through the Qualtrics survey system. The study was set up and supervised via the Qualtrics dashboard and was disseminated via an anonymous link to the survey landing page. The study was tailored to be compatible with various devices, such as tablets and phones, to ensure a smooth experience for participants.

Prior to beginning the survey, participants were asked to confirm that their age was over 18, and that they lived in the UK during the COVID-19 pandemic. Those who did not meet the inclusion criteria were directed to a page which thanked them for their interest and closed the survey. Remaining participants were then provided with information about the study aims and were asked to tick a box indicating their consent to take part (Appendix B). Participants were informed that they had a right to withdraw up until the end of the study, by either closing the page, or not choosing to submit their final responses at the end of the survey.

Remaining participants were then asked to provide some demographic information, namely a) their age group, b) their gender, and c) their highest level of education. These were collected as categorical variables for the purpose of exploratory analyses and to check the reliability of any results.

The first scale presented to participants was the 18-item short form ACT scale (Duckitt et al, 2010) measuring levels of right-wing authoritarianism (Appendix C). This scale measures RWA as a set of three related ideological attitudes and scored on a 7-point Likert scale ranging from 1. Strongly disagree to 2. Strongly agree. Items were phrased as

statements, to which participants were asked to indicate their level of agreement. An example of the items on this scale would be: “Obedience and respect for authority are the most important virtues children should learn.” Half of the items in this scale are negatively worded and reverse-scored to reduce respondent bias.

The second scale presented was the 16-item SDO7 scale (Ho et al, 2015) measuring levels of social dominance orientation (Appendix D). This scale was also scored on a 7-point Likert scale using the same terminology as previous. Items were phrased as statements, to which participants were asked to indicate their level of agreement. An example of the items on this scale would be: “Some groups of people are simply inferior to other groups.” Seven of the 16 items in this scale are negatively worded and reverse scored to reduce respondent bias.

The third scale presented was the 22-item Left-Wing Authoritarianism Index (LWAI, Costello et al, 2020) measuring levels of left-wing-authoritarianism (Appendix E). This scale was also scored on a 7-point Likert scale using the previous terminology but does not include any reverse-scored items. An example of the items on this scale is “Getting rid of inequality is more important than protecting the so-called "right" to free speech.”

The final scale presented to participants was a researcher-created 13-item scale measuring adherence to COVID-19 NPIs (Appendix F). This scale was scored using a 5-point Likert scale from 1. Never to 2. Always. Items included statements such as: “I wear a face covering in enclosed spaces,” with participants asked to select the answer most applicable to themselves. All of the items on the scale were then reverse scored to ensure the measurement of *non-adherence* as opposed to simply measuring adherence. This adherence scale was piloted to measure its validity and reliability, which demonstrated that the scale had a Cronbach alpha coefficient of .92, suggesting a strong internal consistency.

Upon completion of the study, participants were provided with a debrief page (Appendix G), and the option to select a button indicating their willingness to submit their responses. If not ticked, this participants' data were then excluded from the analysis.

3.3.4 Procedure

This study was undertaken following a research proposal submitted to the University of Wales Trinity Saint David's department of psychology (Appendix H). The ethical considerations of the project were considered thoroughly, and approval was given to conduct the study from the UWTSD ethics panel in November of 2020. Please see Appendix I for the application form submitted.

Following ethical approval, the study was piloted as part of UWTSD undergraduate students' research module. Students were asked to complete the study and to provide feedback in return for a course credit. Around 20 students completed the pilot study, and no major issues were discovered. The pilot dataset was then used to analyse the reliability of the scales included, which were acceptable, and it was decided that the study was ready to proceed.

Data used in this study were collected between February 12th, 2021, and June 27th, 2021. The data was downloaded to SPSS on June 28th, 2021. The dataset was screened for outliers, variables were renamed appropriately, and extraneous variables were removed. The data collection remains open currently, with a view to improving the generalisability of future findings with a larger sample size.

3.4 Results

3.4.1 Regression Analysis

Table 4

Descriptive statistics for participant total scale scores

Scale	N	Minimum	Maximum	Mean	Standard Deviation
ACT	85	19	90	61.99	16.46
SDO	85	20	76	43.25	13.09
LWAI	85	30	127	83.93	19.18
Non-adherence	85	13	56	22.04	10.70

The main hypothesis of this study was that a model combining levels of RWA ($M = 61.9$, $SD = 16.5$), SDO ($M = 43.3$, $SD = 13.1$), and LWA ($M = 83.9$, $SD = 19.2$) would strongly predict levels of COVID-19 NPI non-adherence ($M = 22.04$, $SD = 10.7$). A multiple regression analysis was conducted, with all of the variables being entered simultaneously. The results indicate that the hypothesis can be accepted, and it can be statistically inferred that the three predictor variables, when taken together, can significantly explain 11.9% of COVID-19 NPI non-adherence in a UK population, (Adjusted $R^2 = .119$, $F(3,81) = 4.78$, $p < .005$). It emerged that SDO was the strongest unique contributor to the model ($\beta = .331$, $p = < .05$), RWA was the next strongest unique contributor ($\beta = -.291$, $p = < .05$), and LWA was the least unique contributor ($\beta = -.218$, $p = < .05$). All three variables were statistically significant contributors to the model.

Alongside the main hypothesis, this study aimed to explore the validity of LWA as a concept, when compared to the more prominent and widely accepted concepts of RWA and SDO. Exploring the correlations between each individual predictor variable and the outcome variable showed that a) RWA had no significant independent relationship with non-adherence ($r = .063, p = .57$), b) SDO had a small, significant correlation with non-adherence ($r = .23, p = .03$), and c) LWA had a small inverse correlation with non-adherence ($r = -.25, p = 0.2$). The fact that RWA has no correlation with non-adherence but emerged as a strong contributor to the predictive model could be attributed to confounding factors associated with a strong relationship between RWA and the SDO variable ($r = .55$). This outcome is explored in the discussion section.

3.4.2 Exploratory analyses

Further exploratory analyses were conducted on the data, in order to explore whether the demographic variables were related to any of the four measured concepts. Given the relatively small sample, it seemed appropriate to check whether there were any over-representations of age groups, gender, or education levels. The appropriate T-tests and ANOVA tests were run in order to explore the relationships between the variables mentioned.

There were no significant differences in scores of RWA based on gender ($p = .20$), age group ($p = .68$), or education level ($p = .63$). There were no significant differences in scores of SDO based on gender ($p = .51$), age group ($p = .68$) or education level ($p = .18$). There were no significant differences in non-adherence scores based on gender ($p = .15$), age group ($p = .12$), or education level ($p = .18$).

In regard to differences in LWA scores, there were no significant differences based on gender ($p = .07$) or education level ($p = .37$). However, the data showed that there was a

significant difference amongst the age groups on scores of LWA. Participants in the 18–24-year-old category scored significantly differently on LWA compared to those in the 45–54 age range ($p = .01$). Those in the 18–24 group also scored significantly differently on LWA compared to those in the 65–74 group ($p = .04$). This shows that there is a relationship between age and levels of LWA, with younger people having higher levels of LWA than older people. Those in the 45–54 group did not score significantly differently on LWA than those in the 65–74 group ($p = .39$).

These exploratory analyses show that RWA and SDO and non-adherence are not related to the demographic variables of age, gender, or education level. While LWA has no apparent relationship to the gender or education level of participants either, there does seem to be a relationship between levels of LWA and age.

3.5 Discussion

3.5.1 Main findings

This study aimed to explore the issue of non-adherence to COVID-19 NPIs from a socio-ideological perspective. It was hypothesised that a model combining the well-established psychological concepts of RWA and SDO, alongside the more contemporary construct LWA would prove to be a strong predictor of non-adherence behaviour. This aim was met, and the regression analysis showed that the initial hypothesis can be accepted. This study also aimed to assess the feasibility of the LWA concept in practice. This aim was also met, and these findings are discussed in detail below.

The regression model combining RWA, SDO and LWA, while overall showing promise as a predictive tool, also provided interesting insights about the strength of the individual relationships between all of the entered variables. It was found that RWA had no

significant independent relationship with non-adherence but was highly correlated with SDO. This outcome does not necessarily refute the findings of previous research but does raise questions surrounding the efficacy of using this measure as a stand-alone tool of measurement. It is well known that RWA and SDO are distinct but related concepts, but this did not come through in this dataset. Instead, it was found that SDO was both the strongest contributor to the overall model, and the only variable that was positively correlated with non-adherence. In context, this suggests that peoples' beliefs in social hierarchies are an influencing factor on their decisions not to comply with COVID-19 NPIs, but that the constructs of RWA (authoritarianism, conservatism, and threat) are not influencing factors on this behaviour. Individuals' perceptions of which is a "superior" group (between those who comply with COVID-19 guidelines and those who do not) is an influential factor affecting their adherence choices.

Interestingly, the LWA variable was the weakest contributor to the combined predictive model but emerged as having a significant inverse correlation with the outcome variable. This means that higher levels of LWA are associated with higher levels of *adherence*. This finding fortifies the recent literature surrounding LWA and shows that although authoritarianism in the traditional right-wing sense showed no correlation with adherence behaviours either way, the LWA measure captured an interaction, highlighting a rise in adherence amongst individuals who believe in an authoritarian government with liberalistic values. Essentially, this study's findings support the supposition that LWA is a distinct psychological concept that can be utilised to better understand health behaviours. In fact, it must be noted that in this study, LWA was more highly correlated with the outcome variable than both RWA and SDO individually, further bolstering its validity for use in future research.

It was also intriguing to find that both LWA and SDO are paradoxically related to adherence, in that higher LWA correlates with higher adherence, and higher SDO correlates with lower adherence. Authoritarianism has long been understood within the psychological literature to positively correlate with beliefs in social hierarchies, but the current findings suggest that authoritarianism based on *liberal* ideals opposes the idea of social hierarchies. The increasing evidence for the existence of LWA might indicate a coming social shift, wherein liberal ideologies, predisposed to break down those social hierarchies, are on the rise. Linked to this point, another finding in this study was the significant link between LWA and age. It was discovered that the youngest group of participants showed the highest levels of LWA, significantly more than the two eldest age groups. This could again imply an incoming ideological change, as this generation develop and influence society. When exploring socio-psychological motivations for behaviour, it is highly important to take notice of such societal shifts, and to incorporate new concepts and theories into research endeavours. An increase of studies utilising both LWA and SDO could further general understandings of how the concepts both interact and oppose one another, improving recommendations for behaviour change initiatives. Conversely, as it was found that those high in LWA are more likely to adhere to the COVID-19 NPIs, compliance with health behaviour initiatives could improve over time regardless.

3.5.2 Methodological considerations

In the interest of fairness, it is imperative to recognise some of the limitations of this current study. Firstly, three of the measures used to collect data were the ACT (Duckitt et al, 2010), the SDO7 (Ho et al, 2015), and the LWAI (Costello et al, 2020). These are well established and/or rigorously tested tools and showed strong validity and reliability in the

resulting data. The fourth scale was a researcher-created measure of non-adherence behaviour. While this scale was piloted and tested for reliability beforehand, it was worded in way that would collect data measuring *adherence*, rather than non-adherence. Although this issue was easily overcome by simply reverse scoring the items prior to analysis, it is realised that this issue could have been avoided if the questions were negatively worded in the first place. It could also be of benefit to incorporate both positively worded items and negatively worded items into the scale, to reduce the possibility of respondent bias, which can be a common issue with online research (Furnham, 1986).

It is also noted that despite the influx of COVID-19 research, it appears that the majority of studies have utilised different scales to measure adherence. While this is necessary to some degree, because of the variance in COVID-19 NPIs across countries, it could be recommended that these various scales are synthesised into a single measure that can be used universally. This would increase the generalisability of any data gained from future research and allow for more accurate comparisons of data across studies. It is also recognised that the ever-evolving nature of the COVID-19 pandemic and thus, the NPIs themselves, could alter how people answer specific items. For example, certain restrictions such as self-isolation were lifted before others, such as wearing face-coverings. It is therefore recommended that participants who complete the scale are asked to consider their actions during the specific time that COVID-19 NPIs were in force in their country of origin. Including this caveat in future studies could help to avoid collecting irrelevant or unrepresentative adherence data.

Another factor that could have skewed the finding within this study was the relatively small sample size included in the analysis. Unfortunately, this is a notoriously common issue with social science dissertation projects (Mirick et al, 2017) and was possibly exacerbated by the relatively long length of the online survey. There were a number of incomplete surveys

removed from the dataset, which supports the assumption of respondent fatigue (Peytchev & Peytcheva, 2017). One way of reducing this in future research could be to incorporate and advertise study completion rewards, such as financial incentives or via utilising online systems which provide points to participants. The issue of sampling could also be overcome by advertising future studies more widely online, or by utilising services such as Prolific.com, which are chargeable but effective resources (Prolific, n.d.).

3.5.3 Conclusion

To summarise, this study has provided some valuable and contemporary insights into the socio-ideological factors influencing COVID-19 NPI adherence. Despite a few methodological limitations, as outlined above, a number of interesting points have arisen from the investigation and the post-hoc analyses. It was found that the initial hypothesis could be accepted, and that a combined model encompassing the socio-ideological models of RWA, SDO and LWA could significantly predict non-adherence to COVID-19 NPIs. However, in contrast to much previous literature espousing the efficacy of the theoretical construct RWA (Altemeyer, 1981; Azevedo et al, 2021; Brosowsky et al., 2021, Clarke et al, 2021; Duckitt et al, 2010), this study did not find a significant individual relationship between RWA and adherence, suggesting that RWA has little to do with why people adhere or do not adhere to COVID-19 NPIs. Results did show that both SDO and LWA are correlated with adherence individually, giving credence to the proposition that LWA is a distinct construct that the previous knowledge surrounding RWA hasn't yet captured. It is therefore pertinent to recommend that measures of LWA be utilised more often within future studies surrounding health behaviours. It was also found that SDO and LWA are oppositely correlated with adherence, and that LWA is an ideological construct that is significantly more apparent in

younger individuals than those over 45. These findings were synthesised to conclude that perhaps LWA is a rising phenomenon within contemporary society, and therefore an important direction for psychological investigations going forward. It might even be suggested that a potential increase in LWA in society could correlate with an eventual natural increase of positive health behaviours, which is a hopeful and comforting supposition. It would also be beneficial to explore the specific relationships between the constructs of SDO and LWA individually, in order to examine where the two relate with regards to health behaviour and motivations. Finally, it is recognised that along with much of the ongoing research surrounding COVID-19 generally, this current study could conceivably become somewhat obsolete as the pandemic progresses. As of the time of writing, vaccines are being rolled out across the United Kingdom (Gov.uk, 2021b), which could be argued to reduce the relevance of the findings, as NPIs will soon be unnecessary. However, the findings surrounding the usefulness of LWA in health research could become an important consideration as the situation evolves, perhaps being applied to issues such as vaccine hesitancy and psychosocial responses of the public in the wake of the global pandemic.

Chapter 4 – Reflective Chapter

This chapter will be a retrospective analysis of my journey through this Masters dissertation, following the Gibbs reflective framework (1988). I will use this opportunity to explore my thoughts and feelings about the processes involved in completing this project. I will attempt to evaluate the positives and negatives of the experience, exploring what I could have done differently or what I can improve upon in my future research endeavours.

For context, my dissertation was completed as part of the MSc Applied Social and Health Psychology Course at the University of Wales Trinity Saint David (UWTSD). My course was unfortunately affected by the COVID-19 pandemic and therefore, much of the later parts of my Masters dissertation project were conducted outside of the university campus. I was the primary researcher, and I was supported by two academic supervisors for the duration of the project, who provided me with direction and moral support when I began to flag. The other people involved in my degree were undergraduate students who took part in the pilot study, and the actual study participants, who were anonymous individuals recruited via an online advertisement. My dissertation was centred on the very recent phenomenon of individual non-compliance with COVID-19 non-pharmaceutical interventions. I wanted to explore the psychological explanations of why this behaviour was occurring. I completed a literature review on the topic, established an appropriate and relevant research direction, and designed and conducted an online study exploring this topic. I then wrote my research paper for submission as part of my dissertation, and hopefully for future publication in a peer-reviewed journal.

Following the Gibbs reflective framework (1988), it is important to reflect upon my own personal thoughts and feelings I had during the dissertation experience. When I first started my dissertation, I felt apprehensive about choosing my topic of study. I wanted to

produce a piece of work to the best of my ability, and I am a notoriously indecisive person. Because I hope to further progress my academic career in the future, I was also cognizant of the fact that I wanted my study to be something that interested me personally, and something I could then build upon, possibly for an eventual PhD study. This put extra pressure on me and made me even more indecisive and worried about pinning down my specific topic. I considered choosing a topic related to my undergraduate dissertation, which was based on infant health, however I found that my interests were being pulled in the direction of the COVID-19 pandemic. I had noticed a distinct social divide growing in my personal life between people who chose to follow the government guidelines, and those who did not. I spoke to my supervisor about this observation, and it opened up a world of possibilities for research. I explored the literature and realised that there was scientific evidence for this phenomenon and that I was personally seeing the phenomenon through a political ideology standpoint. Having an existing knowledge about RWA and SDO allowed me to pin down my specific dissertation aims, which was a relief, and having made this decision greatly increased my motivation to progress with my study.

During the dissertation process, my thoughts and feelings were wide-ranging and changeable. Once my topic was defined, I initially felt inspired and confident. I wanted to “live up to” my previous high-quality dissertation, and I felt quite assured that I would. I was concerned about gaining enough participants to produce valid and reliable results, but I came to the realisation that the data collection phase could continue even past the writing of the dissertation. I was excited at the prospect of possible future publication and viewed this experience as the start of a positive trajectory in my life. However, as lockdowns ensued and my work outside of university increased, I became complacent and neglectful of my research. I felt overwhelmed with trying to juggle my home life, my role as a key worker, and my academic responsibilities. And the longer I set aside my dissertation, the more panicked and

disappointed in myself I felt. I avoided contacting my supervisor because I felt that I was letting them and myself down. Also, a family health emergency occurred which also demanded my time and attention. During this period, I felt sad, worried, despondent, and like a failure. Recent studies show that this issue was a widespread one for university students over the last year (Peixoto et al, 2021) and explains it as a consequence of the uncertainty of the whole situation. I was lucky enough to receive an extension on my dissertation submission date, and I think this gave me a little shock to realise I had left it so long. This motivated me to prioritise my studies and made me think about the importance of my future, rather than the day-to-day of my current job, which was taking up so much of my time. I felt grateful to my supervisors for their patience and understanding, and I also felt a strange need to justify their belief in my abilities. I wanted to feel worthy of the support and advice they had always shown me. This was not because they made me feel unworthy in any way, but rather a reflection of my own self-doubt, which I had to learn to set aside.

Following this epiphany, I began to gain some of the passion that I had initially had for the topic, and I set aside time to put towards my dissertation. Once I got back into “study mode,” I felt relieved, hopeful, and excited that I would be able to achieve my goal. I also felt a little worried that my negative period would reduce the overall quality of my work, which soon turned to determination that I would succeed regardless of this. My confidence in my abilities began to return and during my literature review and data analysis I felt proud that I still had the skills needed to conduct the study, and optimistic that I could succeed. I hit a few road bumps in this process and second-guessed my own interpretations of the analysis multiple times. During these times I felt panic, and a rising awareness of the time constraints I was working within. I sought out advice and reassurance from my supervisors and came to realise that again, I just needed to trust in my own knowledge and insight. Looking back on my overall thoughts and emotions during my dissertation, I feel a general sense of

accomplishment and pride to have completed it, alongside a pang of regret or worry that I might have been able to do it better, if I had been able to devote more time and energy to the experience.

Evaluating the process outside of my personal emotions, there were aspects that went well, and aspects that did not go well. Firstly, in regard to the problems that arose during the project, I feel that the experience was undeniably hindered by the global pandemic that occurred right in the middle of it. I do not want to excuse my own shortcomings as simply the result of COVID-19, but there were significant hurdles to overcome during this experience, that were caused by this unprecedented situation. My mental health, attention, and time were all impacted by COVID-19, and this was detrimental to the process as a whole. As outlined above, I also think that my internalised disbelief in my own abilities was obstructive to the overall process. This underlying doubt in myself has been an issue throughout my whole academic career so far and I have yet to find a way to quell it. I think that, had I trusted myself more, or more truly considered myself an intelligent and worthy researcher, I would not have avoided engaging with the dissertation as much as I did.

Another thing that did not go completely to plan during the dissertation was the recruitment of participants. I did not end up with a large study sample, which reduces the applicability of findings to a wider population (Arifin, 2018). To a certain degree, this issue was overcome by utilising and reporting the adjusted statistical analysis, and there is always the possibility of collecting more participants in the future, but this dissertation could have benefitted from having a larger dataset. In the future, I think I will advertise the study early, and perhaps on a wider scale, such as utilising online forums and/or websites specifically designed for research recruitment, i.e., Prolific (Prolific.com, n.b.). Also, there were times I struggled to understand certain concepts or to remember information I had been taught on my undergraduate degree. I did manage to synthesise this information through both my own

perseverance and by seeking out the opinions and advice of my supervisors, but I do feel that it hindered my progress, and that keeping my knowledge up to date will be a necessity in future research.

Regarding the positive aspects of the dissertation, the process became easier and much more enjoyable towards the end, even though I used to consider the analysis and write-up as “the hard bit.” I think my experience improved because at that point I had overcome my doubt about my own aptitude, to a degree, and had entered a mindset of “I’m going to complete this, no matter what.” I became determined to both wholly understand my project, and to present it professionally, which spurred me on. Also, the practical elements involved in setting up and running the actual study were all positive parts of the experience. I was able to produce a professional research proposal and apply for ethical approval with minimal supervision, I set up the study on Qualtrics with little to no issue, I was able to download and screen and clean the data appropriately, and I ran the analyses correctly. I attribute this to having a good amount of previous experience conducting research, and to the undeniably fantastic teaching skills of my lecturers and supervisors throughout my entire academic journey. I felt that they had prepared me, for a long time, to become proficient at conducting research and I possessed the knowledge and skills that were necessary for the task. I actually enjoy the practical components of research, and have confidence completing them, which I think was a significant factor influencing my success.

I also feel that the level of input I received from my supervisors during the project was ideal. Considering the overarching context of COVID-19, the lockdowns, the closure of services etc, I felt supported by the university and I knew that they worked hard to put procedures in place to support us as students during that time. Although the campus was closed, I usually work best in my own space and, as the dissertation was an individual undertaking, I do not feel that this disadvantaged me in any way. I knew that my supervisors

were an email away and available to support me should I need anything. In contrast to this, I also did not want to overly rely on my supervisors' input with my dissertation. I felt that as a Masters student, I was more capable than I had been as an undergrad, and that I did not need as much guidance as I had previously. I had worried that I would struggle with either needing too much support or being overly confident and subsequently doing something wrong. Instead, I felt like there was a comfortable balance between being an independent psychological researcher in my own regard and having people to lean on during this experience.

To conclude, I think there are a number of lessons I will take away with me from this dissertation project. Firstly, I acknowledge that unforeseen circumstances significantly hindered my experience and progress. However, I feel that this showed me the value of prioritising my academic goals, as they are more important to me in the long run. I have also learned how valuable the input from my supervisors was once I put that effort in to reconnect with the project. I would encourage future students to utilise that opportunity for expert supervision throughout the course of their dissertations, and to not be worried or feel that you will be "wrong." Mistakes are part of the process, and they teach you to overcome. This point links to the second important enlightenment I had in my journey, which is that I learned to trust my instincts, and to believe in my own capability to succeed. I focused on my prior knowledge of the factors I studied during this dissertation, and it served me well during portions that I felt overwhelmed or unsure. This also taught me that maintaining my current knowledge in the field of psychology is an essential facet of being an effective researcher, and I will strive to do so from now on. With regards to the methodological problems I faced, I have realised that there is significant groundwork and planning involved in things such as recruitment, and I will endeavour in future research to account for this beforehand. I will also attempt to savour any future research experiences, and to continually reflect upon my work

and my feelings. Because in hindsight, I have thoroughly enjoyed this opportunity to contribute to the psychological literature surrounding a topic of my own personal interest.

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Appendix A

JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS SECTIONAL STUDIES

Reviewer_____

Date_____

Author_____Year_____Record Number_____

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Appendix B

Thank you for clicking on our survey!

This study is being undertaken as part of an MSc Applied Psychology dissertation at UWTSD. We are hoping to explore some of the psychological factors that affect people's choices during the Covid-19 pandemic. In order to take part in this study you must be over 18 and live in the United Kingdom.

Your participation in this study is voluntary and your responses are completely anonymous, there will be no way to identify you from your responses. Please answer each question as honestly as possible. You will have the option to withdraw your participation until you check the box at the end of the questionnaire to submit your final responses.

The questionnaire should take approximately 15 minutes to complete.

Are you over 18 and currently living in the UK?

☐ Yes

☐ No

Appendix C

ACT Scale questions

1. It's great that so many young people today are prepared to defy authority

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

2. What our country needs most is discipline, with everyone following our leaders in unity

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

3. Students at secondary schools and universities must be encouraged to challenge, criticise, and confront established authorities

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

4. Obedience and respect for authority are the most important virtues children should learn

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

5. Our country will be great if we show respect for authority and obey our leaders

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

6. People should be ready to protest against and challenge laws they don't agree with

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

7. Nobody should stick to the "straight and narrow." Instead people should break loose and try out lots of different ideas and experiences

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

8. The "old-fashioned ways" and "old-fashioned values" still show the best way to live

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

9. God's laws about abortion, pornography, and marriage must be strictly followed before it is too late

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

10. There is absolutely nothing wrong with nudist camps

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

11. This country will flourish if young people stop experimenting with drugs, alcohol, and sex, and pay more attention to family values

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

12. There is nothing wrong with premarital sexual intercourse

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

13. Strong, tough government will harm not help our country

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

14. Being kind to loafers or criminals will only encourage them to take advantage of your weakness, so it's best to use a firm, tough hand when dealing with them

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

15. Our society does NOT need tougher government and stricter laws

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

16. The facts on crime and the recent public disorders show that we have to crack down harder on troublemakers if we are going to preserve law and order

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

17. Our prisons are a shocking disgrace. Criminals are unfortunate people who deserve much better care, instead of so much punishment

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

18. The way things are going in this country, it's going to take a lot of "strong medicine" to straighten out the troublemakers, criminals and perverts

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

Appendix D

SDO7 Scale questions

1. Some groups of people must be kept in their place

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

2. It's probably a good thing that certain groups are at the top and other groups are at the bottom

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

3. An ideal society requires some groups to be on top and others to be on the bottom

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

4. Some groups of people are simply inferior to other groups

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

5. Groups at the bottom are just as deserving of groups at the top

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

6. No one group should dominate in society

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

7. Groups at the bottom should not have to stay in their place

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

8. Group dominance is a poor principle

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

9. We should not push for group equality

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

10. We shouldn't try to guarantee that every group has the same quality of life

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

11. It is unjust to try to make groups equal

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

12. Group equality should not be our primary goal

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

13. We should work to give all groups an equal chance to succeed

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

14. We should do what we can to equalise conditions for different groups

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

15. No matter how much effort it takes, we ought to strive to ensure that all groups have the same chances in life

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

16. Group equality should be our ideal

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

Appendix E

LWAI Scale questions

1. Bigots must be taught to shut up and stay in their place

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

2. Certain elements in our society must be made to pay for the violence of their ancestors

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

3. Colleges and universities that permit speakers with intolerant views should be publicly condemned

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

4. I am in favour of allowing the government to shut down right-wing internet sites and blogs that promote nutty, hateful positions

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

5. Right-wing news, right-wing talk radio, and other conservative media outlets should be prohibited from broadcasting their hateful views

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

6. Getting rid of inequality is more important than protecting the so-called "right" to free speech

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

7. I cannot imagine myself becoming friends with a political conservative

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

8. I hate being around non-progressive people

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

9. I hate people who are themselves hateful

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

10. I hope that far right extremists become sterile and can never reproduce

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

11. I would be willing to take up arms to help a left-wing revolution succeed

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

12. I would prefer a far-left leader with absolute authority over a right-wing leader with limited power

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

13. If I could remake society, I would put members of historically and presently marginalised groups at the top

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

14. If you're not going to support marginalised groups, you and I can't be friends

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

15. It is important that we destroy the West's nationalist, imperialist views

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

16. Not to change one's behaviour to accommodate victims of social injustice is a denial of their humanity

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

17. One isn't closed-minded for hating people who are themselves closed-minded

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

18. Opposition to affirmative action is, by definition, racist

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

19. People who are prejudiced against transgender folks are evil

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

20. Political correctness does not hinder free speech - it expands it

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

21. The only good racist is a dead racist

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

22. When we spend all of our time protecting the right to "free speech" we're protecting the rights of sexists, racists, and homophobes at the cost of marginalised people

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Agree	Strongly Agree

Appendix F

Adherence Scale questions

1. I wear a face covering in enclosed spaces.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q2. I keep a 2-metre distance between myself and others outside of my home.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q3. I wash my hands thoroughly for at least 20 seconds.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q4. I use hand-sanitizer gel or liquid when I enter shops and/or businesses.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q5. I try to stay at home, and only leave the house for essential reasons.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q6. I cover my coughs and/or sneezes using a tissue or my inner elbow.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q7. I work from home/ I would work from home if it were possible or applicable to me.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q8. I avoid visiting others' homes if they are not part of my extended household bubble.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q9. I stop people from visiting my own home unless they are part of my extended household bubble.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q10. I try to meet people outdoors where possible.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q11. I have self-isolated, **or** I would self-isolate if I had symptoms of coronavirus/if advised to do so by the relevant coronavirus tracing service.

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q12. I avoid meeting other people in groups (according to the current number allowed to meet in my area).

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Q13. I avoid unnecessary travel (according to the current guidelines in force in my area).

1	2	3	4	5
Never	Sometimes	About half of the time	Most of the time	Always

Appendix G

Debrief statement and submit responses

Thank you for completing our study. The questions you answered will provide information on ideological beliefs, and how these might link to the behavioural choices that people make during the COVID-19 pandemic. Historical research into political ideology suggests that those with more right-wing views will adhere more to government edicts, but recent research from the USA relating to the pandemic suggests that they are the most likely to ignore current government guidance. Therefore we are examining left and right-wing views in a UK context to examine this finding further.

If you have any queries or concerns about the research, please contact the MSc research team using the contact details below. Thank you again for your participation.

Researcher:

Amy Bendall: abendall.145497@student.uwtsd.ac.uk

Academic Supervisor:

Dr Paul Hutchings: paul.hutchings@uwtsd.ac.uk

By clicking yes you are confirming that you want to submit your final responses. Your answers are anonymous, and cannot be removed from the study after this point. Are you willing to submit your final responses?

☐ Yes

☐ No

Appendix H

Research Proposal

MSc Applied Social & Health Psychology Part II Research Proposal Form 2020-21
Student: Amy Bendall
Proposed Supervisor: Paul Hutchings
Project Title: Right-wing authoritarianism and adherence to COVID-19 guidelines: a new perspective on a classic theory?
Lay summary of the project <i>(intended purpose, design, and outcomes, suitable for a non-academic audience) (200 words max)</i> Throughout 2020, people worldwide have faced a new threat: the global pandemic caused by the novel coronavirus COVID-19. During this time, governments and public officials have had to make changes to rules and legislation with the goal of keeping their citizens safe and healthy. However, controversy surrounding these rules has grown, and many people refuse to believe in, or follow the guidelines. Individual choice about whether or not to comply with these rules has been linked to political beliefs and personality, but in a way that might be previously un-explored in social psychology. Contrary to how researchers would expect, it seems that individuals high in right-wing authoritarianism (Altemeyer, 1981) are more likely to rebel against authority, and to choose not to comply with government guidelines. This issue could have negative effect on public health overall, and it is important that the reasons for these choices are investigated. The current project will attempt to do this, by using an online questionnaire study and analysing the answers given by members of the public. This study will allow researchers to measure people's

levels of right-wing authoritarianism, and their covid-19 behaviours, and to explore how these concepts might be related. It is hoped that the study will result in deeper understandings of a) How useful a long-established model is in explaining current behaviour, and b) whether this new information could be used to promote more positive behaviour change and to improve public health in the future.

Background literature review? *Why is the project necessary, what psychological theory is the study based upon and what empirical evidence has informed this proposal. (500 words max)*

In response to the current global pandemic, governments across the world have introduced various non-pharmaceutical interventions (NPIs) intended to protect people from COVID-19 and to prevent the spread of the virus. In the United Kingdom, this includes government-mandated social distancing rules, implementing the use of facial coverings and encouraging regular handwashing amongst the public (GOV.uk). These NPIs are based on the scientific evidence available surrounding the novel coronavirus, and airborne viruses in general, and are specifically designed to improve public health. Measures such as these have been shown to be effective in lowering infection rates in countries such as Australia and China (Smith et al, 2020). However, it is pertinent to recognise that adherence to these NPIs is not universal, with recent UK census data showing that among other issues, only 45.2% of respondents were willing to adopt social distancing measures (Atchison et al, 2020). It could be suggested that the topic of COVID-19 “restrictions” has now become a controversial one within the UK, with clear divisions among those who comply with the guidelines, and those who do not (Atchison et al, 2020).

Despite a huge influx of “up to the minute” COVID-19 research, there seems to be a lack of investigation into the issue of NPI adherence/nonadherence, and the psychological factors associated with this phenomenon. As societal norms and expectations are changing, and people are expected to adhere to mass behavioural change initiatives, previous psychological literature tells us that certain people will be more likely to comply with the governments new rules and to

submit to their authority. According to the classic theory by Altemeyer (1981), for example, these individuals would be considered right-wing authoritarians. Right wing authoritarianism (RWA) consists of three subfactors, namely; *submission* (deferring to a perceived authority), *aggression* (aggressiveness towards perceived outgroup members/those deviating from the perceived authoritative norms) and *conventionalism* (adherence to the social norms sanctioned by the perceived authority, and the belief that others should adhere to these norms). RWA is an attitudinal concept which often correlates with conservative beliefs, behaviours, and political affiliations.

However, if exploring the political polarisation of those who adhere to the COVID-19 NPIs and those who do not, it would appear that the opposite is true. For instance, there is an emerging trend showing that politically right leaning individuals are more likely to oppose the mandatory mask rules and to discount the scientific evidence of health risks associated with the novel coronavirus (Rothgerber et al, 2020). It is important to gain a deeper understanding of this phenomenon, specifically, what facets of RWA are related to NPI adherence and to what extent. Exploring how RWA might predict why individuals are choosing to comply or to not comply, could provide psychologists with tools to improve NPI adherence, and thereby, public health overall.

Proposed methodology: *Please describe your study design under the following headings:*

(1,000 words max)

- *Design*
- *Target population and participant recruitment strategy*
- *Data collection and evaluation method*
- *Primary and secondary outcome measures*
- *Planned analyses*

Design

The study will be conducted as an online cross-sectional regression analysis, exploring the extent to which a persons' level of RWA can predict their NPI adherence behaviours during the current pandemic. Given that some contemporary research surrounding this topic appears to

contradict the traditional RWA theory (Rothgerber et al, 2020), the current research team would like to explore this phenomenon further. Therefore, the specific hypotheses proposed for this study are:

1. High RWA scores will predict low levels of NPI adherence behaviour
2. Low RWA scores will predict high levels of NPI adherence behaviour
3. The three internal constructs within the RWA will differ in their levels of predictability of NPI adherence behaviour.

This study proposes the use of online quantitative data collection via the survey programme Qualtrics. Participants will be targeted for recruitment via the University of Wales Trinity Saint David's Twitter page and through the online Social Psychology Network. Participants will be invited to take part in an online survey on a voluntary basis. Participants will be directed via internet link to Qualtrics, where they will be presented with study information, exclusion criteria checks, and a consent form. Participants under the age of 18 and/or those who do not normally reside within the UK will be excluded from this study to ensure the collection of relevant and representative data. Provided that participants give consent and are eligible to take part in the study, they will then be directed to the questionnaire. In order for the participant sample to accurately reflect the adult UK population with a confidence level of 95%, and a confidence interval of 5%, it is estimated that 385 participants would be needed. Therefore, the researcher aims to reach as many recruits as realistically possible within the time frame available.

The questionnaire will take approximately 10-15 minutes to complete. The initial questionnaire will be piloted online with an opportunity sample of University of Wales Trinity Saint David undergraduate students and staff members. Pilot participants will be asked to complete a feedback sheet in order to highlight any issues they encounter when completing the questionnaire (such as issues with comprehensibility or technical problems) and/or to include any further comments to be fed back to the research team.

The outcome variable of this study is the level of adherence to government-mandated COVID-19 guidelines (NPIs). This will be measured using a researcher-created scale, which is based on the interventions that have been recently/are currently in place in the UK. The scale will include items such as “I wear a face covering when entering enclosed public places” which will be scored using a five-point Likert scale from 1 = Never to 5 = Always. This scale will be tested for reliability using Cronbach’s alpha calculations, tested for face validity by a doctoral-level social psychologist, and tested for internal validity using factor analysis following a pilot study.

The predictor variable of this study is the participants’ level of right-wing authoritarianism, as measured by the Aggression-Submission-Conventionalism scale (ASC, Dunwoody & Funke, 2016). This psychometrically robust 18-item scale was adapted from Altemeyer’s original three-factor theory of RWA (Altemeyer, 1981), and has improved the discriminant validity of the three internal constructs of the model. This will allow researchers to explore how each separate construct is related to adherence behaviour, more reliably than if using the original scale. The scale includes items such as “we should believe what our leaders tell us” and “people emphasise tradition too much (reverse-coded)”, and items are scored using a five-point Likert scale between 1=strongly disagree to 5=strongly agree. Age, gender, and education level will also be collected as demographic variables.

It is expected that the data collection phase of the study will run for a maximum of around six weeks. The quantitative data will then be downloaded into SPSS for the purpose of conducting a regression analysis.

Main Ethical considerations (500 words max – please note you will have to complete the University Ethics Form prior to starting data collection, but in this section we need you to outline the key ethical considerations and how you will attempt minimise any risks)

In accordance with the relevant publications listed below, signed, online informed consent will be required for all participants. Participants will be informed via the online consent form that their participation is strictly voluntary and that they have the right to withdraw and remove their data (by closing the page) at any time. An online debrief form will be presented to each participant, explaining the purpose of the study, and providing details on how to contact the research team should they have any questions or concerns. To maintain anonymity, participants will automatically be assigned an ID number via Qualtrics and only anonymised data will be available for the research team to analyse. A potential risk to the research is unkind/unwarranted communications from participants. This risk will be mitigated by all communications being directed exclusively through the university email system, and all communications must be addressed by the team as a whole.

The topic of COVID guideline adherence is a controversial one at the current time and to minimise the risk of upsetting or offending participants, a disclaimer will be included at the beginning of the study. This disclaimer will emphasise that this is a research project and will assure participants that their choices and opinions are valid, and that they will receive no judgement or repercussions from their (completely anonymous) answers.

Ethical Guidelines that will be adhered to:

British Psychological Society. (2014). *Code of Human Research Ethics*. Retrieved from: <https://www.bps.org.uk/sites/bps.org.uk/files/Policy/Policy%20-%20Files/BPS%20Code%20of%20Human%20Research%20Ethics.pdf>

British Psychological Society. (2017). *Ethics Guidelines for Internet-Mediated Research*. Retrieved from: <https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/Ethics%20Guidelines%20for%20Internet-mediated%20Research%20%282017%29.pdf>

British Psychological Society. (2018). *Code of Ethics and Conduct*. Retrieved from: <https://www.bps.org.uk/sites/www.bps.org.uk/files/Policy/Policy%20-%20Files/BPS%20Code%20of%20Ethics%20and%20Conduct%20%28Updated%20July%202018%29.pdf>

University of Wales Trinity Saint David. (2020). *Research Ethics & Integrity Code of Practice*. Retrieved from: <https://www.uwtsd.ac.uk/media/uwtsd-website/content-assets/documents/research/research-ethics-integrity-code-practice.pdf>

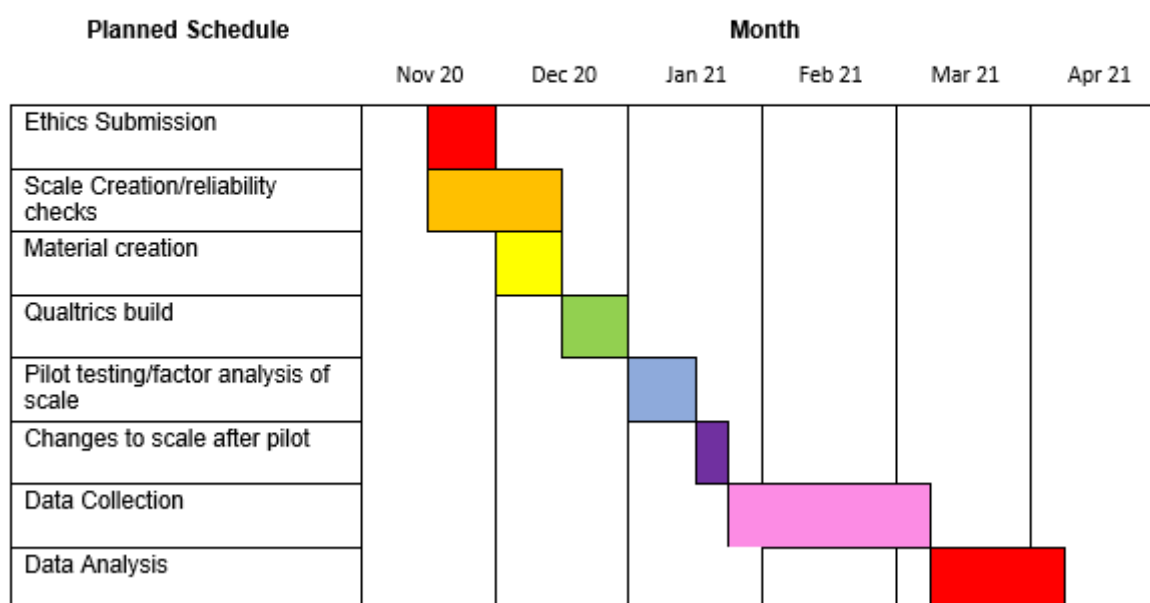
What are the expected outputs from this project? How could the results of this study help individuals and/or organisations to tackle this issue? How will you evidence its success? (200 words max)

It is hoped that this project will provide researchers with novel data regarding the efficacy of the RWA model and its applications to social psychology in the current global context. This study could also add to the growing body of important research by uncovering one possible explanation for adherence/non-adherence to COVID-19 safety measures. In turn, this research could aid in future behaviour-change initiatives that could improve public health and wellbeing.

Timescales for project completion

• (Please produce a Gantt chart or table indicating the proposed timescales for the project)

Timescales for project completion
Gantt Chart of proposed timescale: 6 months



Up to ten key references

Altemeyer, B. (1981). *Right Wing Authoritarianism*. Winnipeg: University of Manitoba Press

Atchison, C. J., Bowman, L., Vrinten, C., Redd, R., Pristera, P., Eaton, J. W., & Ward, H. (2020). Perceptions and behavioural responses of the general public during the COVID-19 pandemic: A cross-sectional survey of UK Adults. *medRxiv*.

Dunwoody, P. T., & Funke, F. (2016). The Aggression-Submission-Conventionalism Scale: Testing a New Three Factor Measure of Authoritarianism. *Journal of Social and Political Psychology*, 4(2), 571-600.

GOV.uk (2020). *Local COVID alert levels: what you need to know*. Retrieved from: <https://www.gov.uk/guidance/local-covid-alert-levels-what-you-need-to-know>

Rothgerber, H., Wilson, T., Whaley, D., Rosenfeld, D. L., Humphrey, M., Moore, A., & Bihl, A. (2020). Politicizing the covid-19 pandemic: Ideological differences in adherence to social distancing.

Smith, L. E., Potts, H. W., Amlot, R., Fear, N. T., Michie, S., & Rubin, J. (2020). Adherence to the test, trace and isolate system: results from a time series of 21 nationally representative surveys in the UK (the COVID-19 Rapid Survey of Adherence to Interventions and Responses [CORSAIR] study). *medRxiv*.

Feedback from Dissertation Module Leader/Supervisor:

Full Approval (subject to ethical approval)

Provisional Approval

Not Approved

Appendix I

Ethical Approval application

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

Delete the Guidance Notes at the end of the form BEFORE submitting your application

SECTION A: About You (Principal Researcher)

Full Name:		Amy Bendall			
Tick all boxes which apply:		Member of staff:	☐	Honorary research fellow:	☐
		Undergraduate Student	☐	Taught Postgraduate Student	☒

Institute/Academic Discipline/Centre:	School of Psychology & Counselling
Campus:	SA1 Campus, Swansea
E-mail address:	abendall.145497@student.uwtsd.ac.uk
Contact Telephone Number:	07985386668
For students:	
Student Number:	P145497
Programme of Study:	MSc Applied Social and Health Psychology
Director of Studies/Supervisor:	Dr Paul Hutchings

SECTION B: Approval for Research Activity

Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
			Date	
If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
	Institute Research Committee	☐		
	Other: Dissertation Supervisor sign off - Dr Paul Hutchings	☒	18/10/2020	

SECTION C: Internal and External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines.	
UWTSD Research Ethics & Integrity Code of Practice	☒
UWTSD Research Data Management Policy	☒
BPS Code of Ethics and Conduct (2018)	☒
BPS Code of Human Research Ethics (2019)	☒
BPS Ethics Guidelines for Internet-Mediated Research (2017)	☒

SECTION D: External Collaborative Research Activity

Does the research activity involve collaborators outside of the University?		YES	☐	NO	☒
If Yes, please provide the name of the external organisation and name and contact details for the main contact person and confirmation this person has consented to their personal data being shared as part of this collaboration.					
Institution					
Contact person name					
Contact person e-mail address					
Has this individual consented to sharing their details on this form?		YES	☐	NO	☐
Are you in receipt of a KESS scholarship?		YES	☐	NO	☐
Is your research externally funded		YES	☐	NO	☐
Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
	Employed	YES	☐	NO	☐
Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐
Permission to undertake the research has been provided by the partner organisation	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

Does this organisation have its own ethics approval system?	YES	☐	NO	☐
If Yes, please attach a copy of any final approval (or interim approval) from the organisation				

SECTION E: Details of Research Activity

Indicative title:	Ideology and adherence to COVID-19 guidelines.		
Proposed start date:	05/12/20	Proposed end date:	01/05/21
Introduction to the Research (maximum 300 words) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the three points below: • <i>Purpose of Research Activity</i> • <i>Proposed Research Question</i>			

- *Aims of Research Activity*
- *Objectives of Research Activity*

Demonstrate, briefly, how **Existing Research** has informed the proposed activity and explain

- *What the research activity will add to the body of knowledge*
- *How it addresses an area of importance.*

Purpose of Research Activity

Throughout 2020, people worldwide have faced a new threat: the global pandemic caused by the novel coronavirus COVID-19. During this time, governments and public officials have had to make changes to rules and legislation with the goal of keeping their citizens safe and healthy. However, controversy surrounding these rules has grown, and many people refuse to believe in, or follow the guidelines. Individual choice about whether or not to comply with these rules has been linked to political beliefs and attitudes, particularly related to ideology (Manson, 2020). Individuals high in right-wing authoritarianism (RWA; Altemeyer, 1981) tend to show a more rigid adherence to social rules, suggesting that they are more likely to comply with government guidelines, whilst those high in social dominance orientation (SDO; Pratto et al., 1994) often consider themselves superior to others and so are less likely to adhere to guidelines. Whilst controversial, the concept of left-wing authoritarianism (LWA; Costello & Lilienfeld, 2019) may also play a role in adherence to government guidance, although this has not been previously explored within a UK context. The current project will therefore use an online questionnaire method to measure participants' RWA, SDO, and LWA attitudes, and Covid-19-related behaviours to examine whether there is a link between these psychological ideological constructs and adherence to government guidance during the Covid-19 pandemic.

Research Question

Do levels of RWA, SDO, and LWA predict adherence to Covid-19 specific non-pharmaceutical interventions (NPI's)?

Aims of Research Activity

This study aims to explore three specific hypotheses. Namely;

4. High RWA scores will predict high levels of NPI adherence behaviour
5. High LWA scores will predict high levels of NPI adherence behaviour
6. High SDO scores will predict low levels of NPI adherence behaviour

Objectives of Research Activity

To identify whether psychological ideological factors can predict adherence to government guidelines during a pandemic.

Proposed methods (maximum 600 words)

Provide a brief summary of all the methods that **may** be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed.

Design

The study will be conducted as an online cross-sectional regression analysis, exploring the extent to which a person's levels of RWA, SDO and LWA can predict their NPI adherence behaviours during the current pandemic. Therefore, the specific hypotheses proposed for this study are:

1. High RWA scores will predict high levels of NPI adherence behaviour
2. High LWA scores will predict high levels of NPI adherence behaviour
3. High SDO scores will predict low levels of NPI adherence behaviour

This study proposes the use of online quantitative data collection via the survey programme Qualtrics. Participants will be targeted for recruitment via the University of Wales

Trinity Saint David's Twitter page and through the online Social Psychology Network.

Participants will be invited to take part in an online survey on a voluntary basis. Participants will be directed via internet link to Qualtrics, where they will be presented with study information, exclusion criteria checks, and a consent form. Participants under the age of 18 and/or those who do not normally reside within the UK will be excluded from this study to ensure the collection of relevant and representative data. Provided that participants give consent and are eligible to take part in the study, they will then be directed to the questionnaire. In order for the participant sample to accurately reflect the adult UK population with a confidence level of 95%, and a confidence interval of 5%, it is estimated that 385 participants would be needed. Therefore, the researcher aims to reach as many recruits as realistically possible within the time frame available.

The questionnaire will take approximately 15-20 minutes to complete. The initial questionnaire will be piloted online with an opportunity sample of University of Wales Trinity Saint David undergraduate students and staff members. Pilot participants will be asked to complete a feedback sheet in order to highlight any issues they encounter when completing the questionnaire (such as issues with comprehensibility or technical problems) and/or to include any further comments to be fed back to the research team.

The outcome variable of this study is the level of adherence to government-mandated COVID-19 guidelines (NPIs). This will be measured using a researcher-created scale, which is based on the interventions that have been recently/are currently in place in the UK. The scale will include approximately 15 items such as "I wear a face covering when entering enclosed public places" which will be scored using a five-point Likert scale from 1 = Never to 5 = Always. This scale will be tested for reliability using Cronbach's alpha calculations, and tested for face validity and internal validity using a manipulation check and factor analysis following a pilot study.

The first predictor variable within this study is the participants' level of right-wing authoritarianism, as measured by the short-form 18-item Authoritarianism-Conservatism-Traditionalism Scale (ACT: Duckitt et al, 2010). This scale was adapted from Altemeyer's original three-factor theory of RWA (Altemeyer, 1981), and has improved the discriminant validity of the three internal constructs of the model. This will allow researchers to explore how each separate construct is related to adherence behaviour, more reliably than if using the original scale. The scale includes items such as "Our country will be great if we show respect for authority and obey our leaders" and "Students at secondary schools and at university must be encouraged to challenge, criticize, and confront established authorities (reverse-coded)", and items are scored using a seven-point Likert scale between 1=strongly disagree to 7=strongly agree.

The second predictor variable within this study is participants' level of social dominance orientation, which will be measured using the 16-item SDO₇ scale (Sidanius et al, 2015). This scale will allow researchers to explore the internal concepts of social dominance orientation (trait dominance and anti-egalitarianism) as it pertains to adherence behaviour. The scale includes items such as "An ideal society requires some groups to be on top and others to be on the bottom" and "We should work to give all groups an equal chance to succeed". Items in the scale are scored using a seven-point Likert scale between 1=strongly disagree to 7=strongly agree, with half of the questions being reverse scored to ameliorate responder bias.

The third predictor variable within this study is participants' level of left-wing authoritarianism, which will be measured using the short-form Left-Wing Authoritarianism Index (Costello & Lilienfeld, 2019). This 22-item scale has also been utilised in very recent research related to the current study (Manson, 2020), and could provide important and novel insights into the subsistence of this concept, and how LWA plays a role in pandemic-related behaviour. The scale includes items such as "Getting rid of inequality is more important than protecting the so-called "right" to free speech" and "Political correctness does not hinder free

speech - it expands it,” and items are scored using a seven-point Likert scale between 1=strongly disagree to 7=strongly agree.

Age, gender, and education level data will also be collected as demographic variables.

It is expected that the data collection phase of the study will run for a maximum of around six weeks. The quantitative data will then be downloaded into SPSS for the purpose of conducting a regression analysis.

Location of research activity

Identify all locations where research activity will take place.

Online questionnaires are to be conducted through Qualtrics – no physical data collection. Study to be managed online from either the UWTSD SA1 campus psychology labs, or the researchers own home, dependent on the ongoing advice from Welsh government.

Research activity outside of the UK

If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants.

N/A

Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☒
	YES	☐
If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with prevailing data protection law of the country in question and England and Wales.		

SECTION F: Scope of Research Activity

Will the research activity include:	YES	NO
Use of a questionnaire or similar research instrument?	☒	☐
Use of interviews?	☐	☒
Use of diaries?	☐	☒
Participant observation with their knowledge?	☐	☒
Participant observation without their knowledge?	☐	☒
Use of video or audio recording?	☐	☒
Access to personal or confidential information without the participants' specific consent?	☐	☒
Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
Investigation of participants involved in illegal activities?	☐	☒
Use of procedures that involve deception?	☐	☒
Administration of any substance, agent or placebo?	☐	☒
Working with live vertebrate animals?	☐	☒
Other primary data collection methods, please explain in this box For example, 'focus groups'. Please indicate the type of data collection method(s) in this box and tick the accompany box.	☐	☒
Details of any other primary data collection method:		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

Who are the intended participants:	YES	NO
Students or staff at the University?	☒	☐
Adults (over the age of 18 and competent to give consent)?	☒	☐
Vulnerable adults?	☐	☒
Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
Prisoners?	☐	☒
Young offenders?	☐	☒
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
People engaged in illegal activities?	☐	☒
Others (please identify specifically any group who may be unable to give consent) please indicate here and tick the appropriate box.	☐	☒
Other – please indicate here: (this box should expand as you type)		

Participant numbers and source	
Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
How many participants are expected?	In order for the participant sample to accurately reflect the adult UK population with a confidence level of 95%, and a confidence interval of 5%, it is estimated that 385 participants would be needed. Therefore, the researcher aims to reach as many recruits as realistically possible within the time frame available.
Who will the participants be?	Adults living in the United Kingdom during the Covid-19 pandemic, who have access to the internet.
How will you identify the participants?	Participants will be recruited via the Centre for Psychology and Counselling Twitter and Facebook accounts. Prior to taking part in the online questionnaire, participants will be provided with an online information sheet with instructions on how to complete the survey, an estimate of how long the survey will take and highlighting the exclusion criteria below (to avoid disappointment if screened out). Participants will also be assured that their data is confidential, and their answers will not be traceable back to them. Participants who are eligible for inclusion will then be provided with an online consent form which they would need to read and tick the appropriate boxes confirming their acquiescence.

	Exclusion criteria are: a) Location (United Kingdom-based only) b) Age (18+ only)
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Information for participants:	YES	NO	N/A
Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
Will you tell participants that their participation is voluntary?	☒	☐	☐
Will you obtain written consent for participation?	☒	☐	☐
Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☐	☐	☒
If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☒	☐
Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
If NO to any of above questions, please give an explanation			
The participants will not be given the option to omit questions they do not want to answer as the questions asked are not of a sensitive nature and responses are required in order for the alphas to be calculated in line with previous usage of these measures in other research. Each question is part of a validated scale so to ensure that internal reliability is upheld all questions should be included. Participants still have the option of withdrawing from the study by closing the browser should they not wish to answer a question.			

Information for participants:	YES	NO	N/A
Will participants be paid?	☐	☒	☐
Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
If YES to any question, please provide full details			

1. Potential for harassment or unwanted communications from participants, as researchers contact details are provided. 2. There is a potential risk that participants could leave the study unfinished or uncompleted, thereby affecting the reliability of the analysis	1. To minimise this risk all communications will be directed through the university email system (not personal email addresses) and any communications will be addressed by both the student researcher and the research supervisor. Issues will also be mitigated by the student researchers' regular engagement with the supervisory researcher for support and advice. 2. In order to overcome this, the research team has decided to exclude the data of any participant who does not fully complete the survey. Due to the nature of the online study, all participants will have to complete all questions to continue to the next. Therefore, if a participant exits the webpage, their data will not be included in the analysis.
University/institutional risks For example: adverse publicity, financial loss, data protection	
Risk to University: There is the possibility of risk to the university reputation if the study is conducted poorly and/or unethically.	<i>How will you mitigate the Risk to University:</i> •The researcher will strictly adhere to the ethical guidelines shown in section C. •The student researcher will engage with the supervisory researchers regularly. •The researcher will actively and continuously strive to ensure the integrity and robustness of the research.

Disclosure and Barring Service			
If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
Does your research require you to hold a current DBS Certificate?	☐	☒	☐

SECTION I: Feedback, Consent and Confidentiality

Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
Participants will be provided with an online debrief sheet following the study, thanking them for their contribution, explaining the reasons for the research and reminding them of their right to withdraw their data (by closing the window). They will be asked to tick a box to submit their finalised responses and another box agreeing that they understand that their data cannot then be extracted from the database. The debrief sheet will also include contact details for the research team, in case participants have further questions or want more information.
Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
Participants will be provided with an online consent form, created by the researchers following standard good practice for online consent within Psychology research at UWTSD. The form will be presented on Qualtrics and the participants will have to tick boxes electronically to indicate consent. The consent form will explain the purpose of the research, explaining that the participants participation is voluntary, that the participants' have the right to withdraw (and how to do so – by closing the window), how long the study is expected to take, and what they are expected to do. It will also give the researchers contact details if the participants have any concerns or require more information regarding the study. The participants will be told that their data will be held in accordance with the relevant data protection regulations. Screening for inclusion will happen at this stage, the participants will be asked whether they are 18 years old and live in the United Kingdom, if they answer no, then they will be redirected to a new page showing them that they do not meet the inclusion criteria for the study so they cannot take part.
Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
All data will be collected anonymously through Qualtrics which is an online data management programme. This data will be anonymous when it is used in SPSS since Qualtrics anonymises all data when obtained.

SECTION J: Data Protection and Storage

In completing this section refer to the University's Research Data Management Policy and the extensive resources on the University's Research Data Management web pages (<http://uwtsd.ac.uk/library/research-data-management/>).

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
<i>"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.</i>	☒	☐
If YES, provide a description of the data and explain why this data needs to be collected:		
The data being collected will be demographic and numerical data that can then be analysed via statistical software. Demographic information will be collected via the online consent form on Qualtrics, including age, gender, and education level. There will be a total of four questionnaires collecting information regarding participants' adherence behaviours, RWA levels, SDO levels and LWA levels. These data will be anonymised via the online programme Qualtrics, with each participant being assigned a unique identification number, which will not be able to be linked back to a specific individual. No computer location data will be collected for this study.		
Does it involve special category data (as defined by the GDPR)?	YES	NO
<i>"Special category data" means sensitive personal data consisting of information as to the data subjects' –</i> <i>(a) racial or ethnic origin,</i> <i>(b) political opinions,</i> <i>(c) religious beliefs or other beliefs of a similar nature,</i> <i>(d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),</i> <i>(e) physical or mental health or condition,</i> <i>(f) sexual life,</i> <i>(g) genetics,</i> <i>(h) biometric data (as used for ID purposes),</i>	☐	☒
If YES, provide a description of the special category data and explain why this data needs to be collected:		
Will the research activity involve storing personal data and/or special category data on one of the following:	YES	NO
Manual files (i.e. in paper form)?	☐	☒
University computers?	☐	☒
Private company computers?	☐	☒
Home or other personal computers?	☒	☐

Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
"Cloud" storage or websites?	☒	☐
Other – specify:	☐	☒
For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of password protection, encryption, anonymisation and pseudonymisation:		
The data collected through online questionnaires, including participant consent forms, will be stored on Qualtrics. Data will only be accessed by the research team and will be password protected. The data will be anonymised through Qualtrics assigning each participants data an ID number.		
All Data Storage		
Will the research activity involve any of the following activities:	YES	NO
Electronic transfer of data in any form?	☒	☐
Sharing of data with others at the University?	☒	☐
Sharing of data with other organisations?	☐	☒
Export of data outside the European Union or importing of data from outside the UK?	☐	☒
Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
Publication of data that might allow identification of individuals?	☐	☒
Use of data management system?	☒	☐
Data archiving?	☒	☐
If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and DPA (and/or any international equivalent):		
In accordance with the GDPR and DPA, data will be transferred electronically from Qualtrics to SPSS to run statistical analysis, and will be shared with the project supervisor. The data will remain anonymous. The use of a data management system will be in place in the form of Qualtrics. Data will be archived for two years after the study ends within the UWTSD Research Data Repository, or in line with publisher requirements should a publication result from the findings.		
List all who will have access to the data generated by the research activity:		
Amy Bendall, Dr Paul Hutchings.		
List who will have control of, and act as custodian(s) for, data generated by the research activity:		
Amy Bendall.		
Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		

The data will be stored in an online, secure database via the program Qualtrics. The results from the statistical analysis, which will be saved as an SPSS file, on a password protected computer. All data will be password-protected and only accessible by the researchers specified. The data will be stored for the duration of the study in the above locations. The data will be archived within the UWTSD Research Data Repository for two years after the study ends to allow for use for future publications and research.

Please indicate if your data will be stored in the UWTSD Research Data Repository (see <https://researchdata.uwtsd.ac.uk/>). If so please explain. *(Most relevant to academic staff)*

Dataset record concerning the studies data will be created within the UWTSD Research Data Repository. It will state that the raw data was obtained from, and will be stored at, the data management service Qualtrics. The results from the statistical analysis will be stored in the UWTSD Research Data Repository, this will be saved as an SPSS file. All of the data will be password protected and only accessible by the researchers specified. The data will be protected by anonymity and it would be available to use in future publications.

Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
	NO	☐
Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒
	NO	☐

SECTION K: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.

In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: <https://www.uwtsd.ac.uk/research/research-ethics/>

Signature of applicant:	Amy Bendall (signed)	Date: 10/11/20
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For STUDENT Submissions:

• Director of Studies/Supervisor:	• Dr Paul B. Hutchings	• Date: 22/11/20
• Signature:		

For STAFF Submissions:

• Academic Director/ Assistant Dean:	•	• Date:
• Signature:	•	

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (and have NOT completed Section H of this form) (where appropriate) <i>ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT</i>
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.
☒	I have deleted the guidance notes before submitting the PG2 for consideration

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk , with the title 'Ethical Approval' followed by your name.

You will be informed of the outcome of your claim by email; therefore, **it is important that you check your University and personal email accounts regularly.**

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.