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## Does Enhancing Mind Perception Affect Conspiracy Belief?

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# DOES ENHANCING MIND PERCEPTION AFFECT CONSPIRACY BELIEF?

by

JORGE R. NOGUERA-SEPULVEDA

(Under the Direction of Nicholas S. Holtzman)

## ABSTRACT

This study was conducted to determine the effectiveness of a novel mind perception manipulation. Mind perception is currently theorized to be an essential aspect of a number of human social psychological processes. Thus, a successful manipulation would allow for the causal study of those processes. This manipulation was created in an attempt to explore the downstream impact of mind perception on the endorsement of conspiracy theories. Conspiracy theories are steadily becoming more and more prominent in social discourse. Endorsement of conspiracy theories are beginning to show real world ramifications such as a danger to human health (e.g., in the anti-vaccination movement). A sample of college students (valid  $N = 53$ ) from a large rural institution in the southeastern United States participated for course credit. These participants completed a mind perception pretest, were randomly assigned to either the manipulation in question (in which participants are asked to consider the ‘mind’ of several targets and write their thoughts about them) or the control condition, and then they completed a posttest. The mixed ANOVA revealed that the interaction term between Time and Condition was not significant. Because the manipulation did not work, other analyses were aborted, in accord with the pre-registration. My discussion focuses on the procedures and potential shortcomings of this manipulation, in an effort to lay the groundwork for a successful one.

INDEX WORDS: Conspiracist belief, Conspiracy, Intervention, Mind perception

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## DEDICATION

To my mother Madeline Sepulveda. I still remember when you taught me to read. Thank you.

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## CHAPTER 1

### INTRODUCTION

A conspiracy theory is defined by *Merriam-Webster* as, “A theory that explains an event or set of circumstances as the result of a secret plot by usually powerful conspirators” (Conspiracy Theory, n.d.). The term conspiracist belief is defined as “the attribution of secret action to one party that might far more reasonably be explained as the less covert and less complicated action of another” (Aaronovitch, 2009, p. 5). In short, conspiracist belief is a reaction assuming a conspiracy has occurred when there are any number of more plausible explanations. As the internet and, by extension, social networking sites become wider spread, a number of communities revolving around conspiracist belief have emerged. A few examples include: dating sites dedicated to people who endorse conspiracy theories (Wilkinson, 2017), conferences discussing the notion that the earth is flat (Dyer, 2018), and even a nationally recognized reporter that hosted then presidential candidate Donald Trump, claiming on his show that a school shooting was faked by the government (Cooper, 2018). It is clear conspiracy theories have become more and more noticeable aspect of daily life and therefore are deserving of rigorous research and study.

While conspiracist beliefs have arguably become more prominent, a literature has emerged that may potentially help elucidate the process by which conspiracist beliefs arise and are maintained. That literature revolves around the concept of mind perception. Mind perception is how an individual perceives the sentience and sapience of a target. In this context, sentience is the awareness and consciousness of a target and sapience is the target’s ‘wisdom’ or its ability to apply previous knowledge to the world at large. Mind perception grew out of the literatures on theory of mind and mentalizing (Waytz, Gray, Epley & Wegner, 2010). Whether or not

something can develop a theory of mind has been an important question in the field for over forty years and continues to fascinate researchers. This could be because developing a theory of mind is an important aspect in moral development or possibly because it may be that theory of mind is a key aspect in separating sentience from sapience (Sherwood, 2015, p. 21; Call & Tomasello, 2008). Whatever the reason, mind perception is a product of this interest. Mind perception targets one of the key aspects of theory of mind, the ability and the amount of mind one sees in a target. For example, a neurotypical individual would not have a theory of mind regarding a towel because a towel has no mental state. A human on the other hand can be seen as having a mental state thus, theory of mind exists for that target, but there are more targets that we know less about. Fictional characters, paranormal entities, governments and other organizations are all sometimes personified but are not actual persons or physical entities.

Mind is perceived on two dimensions. The first is agency, which is “the ability to act, plan, and exert self-control” and the second is experience, which is “the ability to feel pain, pleasure, and emotions” (Gray, Jenkins, Heberlein, Wegner, & Smith, 2011, p. 477). A few empirical investigations provide some hints that mind perception is indeed linked to conspiracist beliefs. Pilot research found a correlation between the dimensions of mind perception and conspiracist belief (Tharp, Holtzman, & Eadeh, 2017; Noguera-Sepulveda, 2018, Unpublished Data) leaving open the possibility that there might be a causal relationship between Mind Perception and Conspiracist belief. What is not known is whether mind perception actually causes an increase in conspiracist beliefs. There is reason to suspect that it might. Rohrer’s studies into statistical models show that, while correlations should never be conflated with causation, correlations can be indicative of a potential causal relationship between variables

(Rohrer, 2018). Although these studies don't show a causal relationship on their own, there is reason to investigate further.

The current research into the causes and motives of conspiracy belief predominantly looks at three main motivation types: as “Epistemic (understanding one’s environment), Existential (being safe and in control of one’s environment), and Social (maintaining a positive image of the self and the social group)” (Douglas, Sutton, & Cichocka, 2017, p. 538 ). Zooming in on the Epistemic motivations to endorse conspiracy theories, there are several key aspects: uncertainty reduction, system justification, and finding meaning when events seem random (Douglass, et al., 2017). Of these ideas perhaps the most notable for this study is the uncertainty reduction. To be uncertain, especially in regards to one’s own safety is by its nature a very aversive state for humans to be in. Because of this we tend to try to find something or someone (i.e. God, Aliens, Luck) to cite as the cause of these events ( Kay, Gaucher, Napier, Callan, & Laurin, 2008). Taking this into consideration, it would be logical that the most powerful and the most enigmatic entities that hold the most control over the world, an all-powerful god, a shady corporation, or a corrupt governments would be the target of our bias to see events with intent (the intentionality bias; Rosset, 2008). These are also the groups that are the target of the lion’s share of conspiracy theories (Brotherton, French, & Pickering, 2013) to the point that they are often seen as the default target of these theories. Which could be because conspiracies are a way for some to feel that the world is not random and dangerous. Thus a conspiracy may be allowing for the perception of a strange or tragic event with an intentionality bias (Rosset, 2008). All the while maintaining a secular view of the event, either atheistically or by allowing such event to occur without God as the acting agent. Therefore, an increasing level of mind perception,

especially towards these powerful entities, may then lead to an increase in the conspiracies attributed to them.

Although this position is presently hypothetical, applications of the current literature on mind perception and motives to endorse conspiracy theories were used to inform this hypothesis. Pilot studies for this project were initially conducted to determine if mind perception was correlated with Conspiracist Belief. It revealed a weak correlation between overall mind perception and conspiracist belief ( $r = .13$ , Noguera-Sepulveda, 2018, Unpublished Data).

I know of no successful attempts to manipulate total mind perception tendencies in perceivers. Thus far, the predominant research (all of which is correlational) has explored differing degrees of mind perception tendencies in two areas. The first area examines how various personality disorders manifest different levels of mind perception (Gray, Jenkins, Heberlein, Wegner, & Smith, 2011a) and the second area explores specific mind perception in various targets (e.g. Robots, Infants, Trees) (Gray & Wegner, 2012; Gray, Gray, & Wegner, 2007). One successful alteration of mind perception was conducted by Gray, Knobe, Sheskin, Bloom, and Barrett, (2011b). This study attempted to alter mind perception by leading participants to 'objectify' a group of mind perception targets, but this instead resulted in a redistribution of the mind perception dimensions rather than a global shift in total. Therefore, there is no known manipulation of mind perception globally. Thus, one of my goals is to successfully develop a manipulation which can alter total mind perception.

Therefore, to further examine this idea I have developed two experimental hypotheses. First, once participants are exposed to my mind perception manipulation, they will show increased levels of mind perception relative to their peers who are in the control group; this should manifest in a significant Time by Condition interaction. Second, if mind perception is

successfully manipulated, then I hypothesize that the treatment condition will have a significantly increased level of conspiracist belief as compared to their peers in the control group.

## CHAPTER 2

### METHODS

This study was preregistered on the Open Science Framework website

([https://osf.io/sr3wn/?view\\_only=3861883ad97a4bb4a38d082dc7ebc242](https://osf.io/sr3wn/?view_only=3861883ad97a4bb4a38d082dc7ebc242)).

#### *Participants*

During an initial attempt at collecting data for this study, I discovered that participants were being exposed to the control regardless of whether or not they were supposed to be in the control condition (all members of the manipulation group were also experiencing the control). At this point, data collection ceased, and it was discovered to be a mistake in the survey flow options on Qualtrics for random assignment. This was corrected so that participants would only see one of the options and data collection resumed. A total of 86 responses were removed due to this error and are not counted as valid participants in this study.

Thereafter, I recruited a total of 88 participants for this study; 35 were removed due to random responding, leaving 53 valid participants—a total of 24 in the manipulation condition and 29 in the control. The participants were on average 20.64 years old ( $SD = 1.46$ ). Among these participants, 33 identified as White, 12 as Black or African American, 6 as Multi-racial, 1 as Other, and 1 chose not to identify their ethnicity. Additionally, 20 identified as men and 33 as women.

### *Materials*

For this procedure, I used two measures predominantly, the Generic Conspiracist belief scale (Brotherton et al., 2013) and the Mind Survey (Gray, 2007). The Generic Conspiracist Belief scale is measured by finding the total mean for the entire scale. Each of the 15 items loads onto one of the five subscales (*Governmental Malfeasance; Extraterrestrial Cover-up; Malevolent Global Conspiracy; Personal Wellbeing; Control of Information*) for an even three items per subscale. Each item is measured on a scale ranging from 1 (*definitely not true*) to 5 (*definitely true*). Brotherton and colleagues (2013) found the measure demonstrate excellent reliability ( $\alpha = .93$ ); in my pilot study, I found a similar reliability (Noguera-Sepulveda, 2017, Unpublished Data,  $\alpha = .91$ ).

The mind survey by Gray (2011) is a means of measuring an individual's perception of a mind in various target. The mind survey consists of six questions on a Likert scale with ratings ranging from 1 (*not at all capable*) to 7 (*very much capable*), asking how capable the target is of some action or trait. Answers to these six questions are solicited with regard to 10 targets (You [i.e., the participant]; Adult Human Male; Adult Human Female; Dog; Deceased Human; God; Human Infant; Robot; Superman; Tree) so that researchers can measure the participant's tendency to perceive the mind in those targets. Internal consistency was calculated for the Mind Survey; I found good reliability for the mind survey as a whole ( $\alpha=.87$ ); this was calculated by analyzing the mind survey as a whole (at the item level) without respect to the dimensions (facets) of mind perception.

### *Procedures*

Participants were recruited through the Georgia Southern SONA system. Participants were all Georgia Southern students enrolled in an Introduction to Psychology class or other

Psychology courses. Once participants arrived at their scheduled experimentation time participants were greeted by the individual conducting the experiment on that day and directed to sign in on a sheet in order to be given credit on SONA. The SONA study was titled “*Thoughts about the Mind.*” While registering for the study, participants were able to see the name and email of the primary researchers, the name of the study, the location and available days were also visible. First, they were directed to their computer where the Qualtrics study was already visible, and then the researcher read the script [See Appendix A]. Before any data was collected, the participants were given a digital informed consent form. The Qualtrics software randomly assigned the participants to either the control condition or treatment condition.

Participants took a Mind Perception pre-test. This pre-test consisted of the mind survey questions being conducted across all targets for the purposes of this study; the items on the mind survey were randomized to account for order effects. While in the treatment condition, participants were asked to consider the mind of various targets. These targets were based off of the items used in the mind survey with a few removed (the adult human male and female targets were collapsed into a non-gendered target and superman was referred to as ‘fictional character’). This was done for brevity and clarity. Those participants in the treatment condition were asked to “consider the mind” of a target and asked to consider the various facets of a mind [See Appendix B]. They then were instructed to write “their thoughts about this prompt”, they were told they would be given 90 seconds and that they had to write at least 20 words on the matter. The participants were instructed to write to allow for cognitive processing of the prompt. The writing prompt also served as a manipulation check to assure participants were being attentive to the instructions. The participants in the control condition were asked to watch two cooking videos and given a prompt on the cooking video estimated to take 18 minutes, which is also the

estimated time it takes to finish the Mind Perception Manipulation. Immediately afterwards, they were given a mind survey post-test which uses the same targets as the pre-test. They were then given the Generic Conspiracist Belief scale. Once this is completed, the participants were sent to an end of survey screen where they were debriefed and then excused. Each of these measures alongside the mind perception manipulation were displayed on individual pages on Qualtrics. This was done to allow for the randomization of the surveys.

### *Design*

For this study, I conducted a 2 (condition: mind perception manipulation vs. control)  $\times$  2 (Time: pre-test, post-test) mixed ANOVA for analysis, wherein the between participants factor is Condition, and the repeated factor is Time.

### *Data Cleaning*

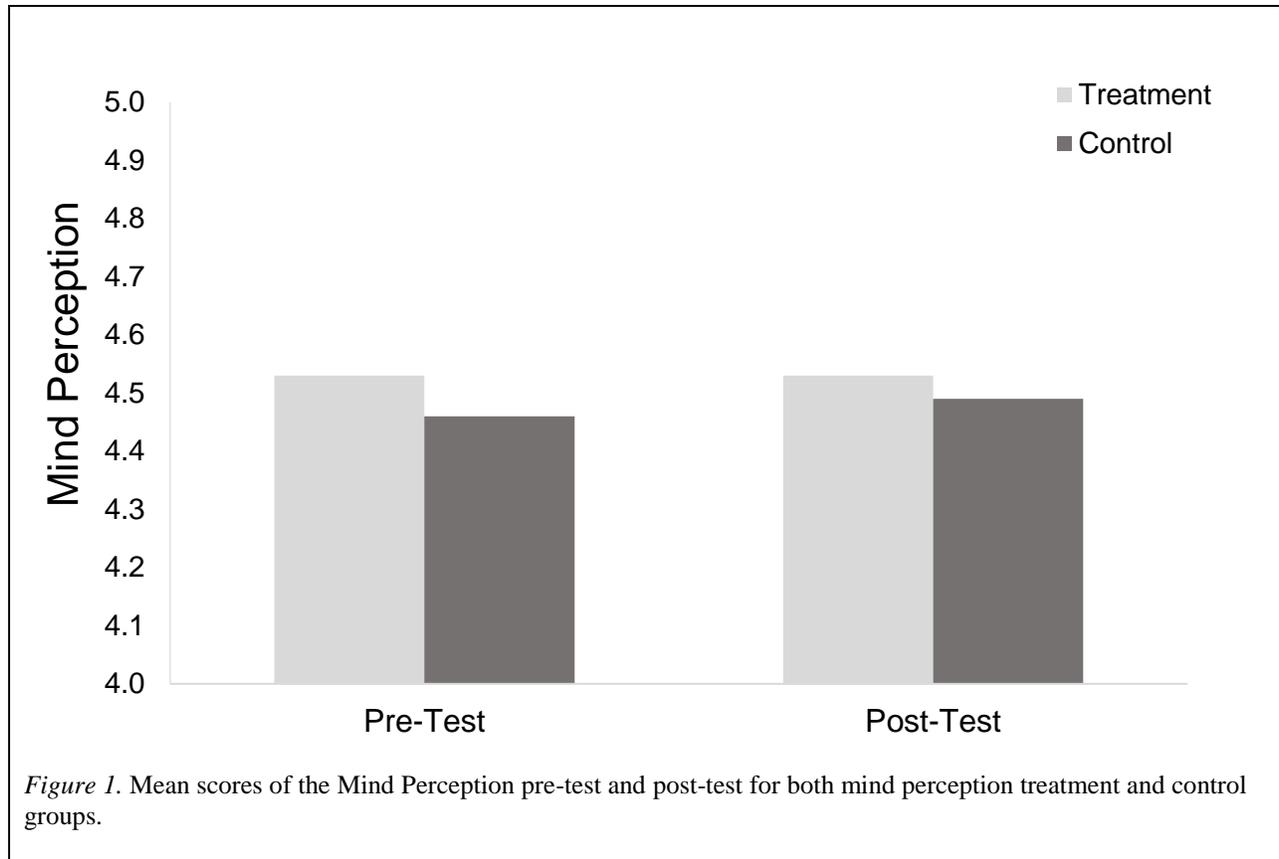
In accord with the pre-registration, I used a series of attention checks throughout the survey to look for random responding. There were four attention checks included at random points in the survey: one in the GCB scale, one in the TIPI, one in the mind perception pre-test, and one in the mind perception post-test. These checks were prompts to choose specific items; “*Select Definitely True*”, “*Select the Middle option*”; “*Select ‘Very much capable*”; “*Select ‘Lowly Capable*”. If any of these attention checks were missed (if the participant picked any other option than the correct option), then that participant was considered a random responder and I omitted their data from all analyses. In order to determine whether the manipulation was successful, I analyzed a short answer section in the manipulation made by participants to filter out non-attentive respondents. Data from any given participant was thrown out if and only if: the answer from each of the manipulation targets were identical to one another, if they were shorter than 20 words, or if the statements were gibberish/incoherent. Gibberish or incoherent statements

were defined as statements in which the researchers were unable to determine the meaning of the statement either due to a lack of syntax or the usage of nonsense words.

## CHAPTER 3

### RESULTS

In order to determine the effectiveness of the proposed mind perception manipulation, I conducted a 2 (Time: Pretest vs. Posttest)  $\times$  2 (Condition: Control vs. Manipulation) mixed ANOVA. I found a non-significant difference between the pretest ( $M = 4.49$ ,  $SD = 0.49$ ) and the posttest ( $M = 4.45$ ,  $SD = 0.52$ ) in testing the main effect for time (Time 1 vs. Time 2) on mind perception  $F(1, 51) < 1.00$ ,  $p = .54$ ,  $\eta_p^2 < .01$ . Additionally, I found a non-significant difference between the manipulation condition ( $M = 4.53$ ,  $SD = 0.44$ ) and the control condition ( $M = 4.50$ ,  $SD = 0.60$ ) when analyzing the main effect for condition (Control vs. Manipulation),  $F(1, 51) < 1.00$ ,  $p = .70$ ,  $\eta_p^2 < .01$ . As depicted in Figure 1, the interaction (Time  $\times$  Condition) was not statistically significant,  $F(1, 51) < 1.00$ ,  $p = .65$ ,  $\eta_p^2 < .01$ . Because the manipulation was unsuccessful, I did not conduct any further analyses, in accordance with the preregistered data analytic plan.



## CHAPTER 4

### DISCUSSION

The first aim of this research was to create a successful mind perception intervention, and the second aim was to determine whether that intervention might lead to higher rates of adopting conspiracy beliefs. After analyzing the data and interpreting the results, I cannot support my first hypothesis about the effectiveness of the proposed mind perception manipulation. Because the mind perception manipulation was unsuccessful, exploring the possibility of whether mind perception led to conspiracy beliefs was impossible in the context of this research project. There are numerous reasons why the manipulation might have been unsuccessful, and these are the focal points of this discussion.

The first reason the manipulation may have failed is that it did not treat the dimensions of mind perception separately. Upon further examination the manipulation does not expressly target the dimensions of mind perception. While it does talk about the various facets that make up mind perception it does not properly target those ideas separately to manipulate them. Instead the manipulation attempted to alter both dimensions at once, which may have been a factor in its failing to produce a significant effect. This idea is consistent with results by Gray and colleagues (2011b), as they attempted to manipulate mind perception by having participants focus on different aspects of a target. In this study, Gray and colleagues had each participant focus on the body of targets (other humans), attempting to get participants to ‘objectify’ the target. This was done under the hypothesis that it might result in less mind being attributed to them. Gray found that the participants total mind perception for those targets did not change overall, but instead led to the targets being seen as having less agency but more experience. In short, focusing on physical bodies caused participants to be more focused on the experience dimension. This

resulted in participants seeing the targets less like agents but more like experiencers (without significantly altering the total mind perception score). Alternatively, my manipulation may have failed because I was attempting to alter both dimensions of mind perception in a single manipulation instead of manipulating them as two separate dimensions. While the manipulation asks participants “to consider” the various facets of the dimensions of mind perception it does not make an argument for why each should be lowered or increased (examples could include prompts regarding the treatment of a corpse or emotions felt towards fictional characters). In the future, researchers might consider limiting the number of targets they use in mind perception manipulation or attempt to manipulate mind perception one target at a time. Doing this might allow for more targeted experiments possibly allowing researchers to see how mind perception interacts with other variables (e.g. Conspiracist Belief, Psychopathology).

It is also possible that mind perception should not be manipulated though targeting the mind as a whole. Instead researchers might attempt to target the dimensions or even the individual facets of mind perception to ultimately raise the total amount of mind being perceived. This is also supported by Gray’s research into the psychopathology’s relationship with mind perception (Gray et al., 2011a). In this study, Gray and colleagues found that alterations in mind perception were not global. Certain psychopathologies (psychopathy, autism spectrum disorder, and schizotypal personality disorder in particular) were correlated with in specific targets moving in various directions on the mind perception spectrum. One such example is while psychopathy was associated with a reduced amount of mind attributed to humans and animals, it had no effect on the ‘leafy oak tree’ or ‘robot’ targets and was furthermore associated with more mind attributed to the fictional hero ‘Superman.’ Gray and colleagues (2011a) also found that individuals with autism attributed less agency to adult humans than neurotypical counterparts but

remained consistent with other targets. Norenzayan, Gervais, and Trzesniewski (2001) found that mentalizing deficiencies, like what can be found in autism, is associated with minimal beliefs in a personal god (which can also be described as less mind being attributed to God, as mind perception is an aspect of mentalization). These examples can serve as evidence that while certain conditions (like psychopathology) are associated with large differences in mind perception, those conditions so far have not been shown to be associated with mind perception globally. Taking this into consideration, attempting to manipulate mind perception globally may not be a viable strategy. Manipulation of mind perception in participants regarding specific targets could be more successful.

Additionally, the manipulation may not have been effective because it does not take demographics into consideration. This position is consistent with Yeager and Walton's (2011) meta-analysis of social psychological interventions. Specifically, they choose a number of educational interventions to analyze to further explain the effectiveness of these interventions. Successful interventions tend to be targeted toward specific demographics (ethnic and SES class identities). Disregarding demographics could have led to a non-significant manipulation effect. Therefore, I would hypothesize that a manipulation designed to target the specific cultural experience of certain participant groups would be more effective as a manipulation. In designing the study this was considered but targeting a single demographic would ultimately limit the number of potential participants and so I decided to prioritize participant numbers rather than their demographics. More research is needed into how different cultures and life experiences alter mind perception in order to properly take these factors into consideration. Future researchers should attempt to clarify these factors.

The last consideration is that the manipulation prompts were themselves flawed in how they were worded. As shown in Appendix C, the prompts asked participants to “consider the mind of [target]” and phrasing it in this way may have ultimately led participants to re-affirm their current level of mind perception of a target rather than alter it in a significant way. The problem with this method is that it has the participants take their existing thoughts and write them down, reinforcing them. The result is, rather than alter their levels of mind perception, they were enticed to persuade themselves to reinforce their beliefs further, making alterations in mind perception unlikely (Aronson, 1999). Pre-testing as a result may have caused participants to anchor their thoughts on mind perception then inhibiting the mind perception manipulation. Given anchoring effect as a potential cause it is possible that if this manipulation was conducted with a four-group design (Solomon, 1949) I might expect to see a greater consistency in mind perception score in the treatment group’s post-test than the control groups post-test.

This study had a few limitations. First and foremost is that the small sample size may not have generated enough power to get reliable data. Second is the sample population; it was a highly homogenous sample comprised of all college students in their early 20s, living in a semi-rural setting, and all having taken or currently taking at least one psychology course. It is possible that any number of these factors working separately or in conjunction made the sample less susceptible to this manipulation. In addition, the manipulation prompts may have been too wordy leading to participants becoming tired and answering without properly contemplating the manipulation prompt, nor actually understanding the facets of mind put forth in the prompt [See Appendix C]. Last, it is possible the participants that were lost due to the procedural error in the beginning of the study were qualitatively different than the participants I had. There may be certain factors that are associated with an individual doing their research requirement earlier in

the semester that are also associated with mind perception. To this point Ebersole and colleagues found weak correlations between later semester participation and various personality factors (most notably conscientiousness) (Ebersole et al. 2016).

Future research should analyze the wording used in the manipulation and alter it to make the participants argue as to why a target does or does not have ‘mind.’ An instance of this could be a prompt arguing that a government is not a ‘mind’ but a conglomeration of minds, thus it could not possibly feel or make any decisions because it is completely under the control of other minds. Second, mind perception should be analyzed in a more in-depth on a target-by-target basis, looking at both dimensions of mind perception separately as well as the total average (this study did not do so because it was focused on global mind perception as the secondary hypothesis was predicated on a shift in total mind perception). Such a manipulation could also be used to analyze the effects of mind perception on conspiracist belief if targets like ‘corporations’ are used in the manipulation. Rai and Diermeier (2015) were able to study this partially through the manipulation of the experience dimension of mind perception. In addition to this it may help to give participants a ‘primer’ on what mind is. As mentioned earlier participants may have gotten tired and started answering the prompts without understanding. A primer explaining what mind is in this context may be useful in preventing participant burnout. Lastly, some care should be given to analyzing the population to look at the psychopathology and personality traits of the participants in order to determine if there are any traits which are correlated with the malleability of mind perception. If the literature continues to find that mind perception cannot be manipulated by altering or reframing a participant’s perception of a mind toward a target (*Adult Human, Dog, Tree*), then it is most likely that experimentation should progress into manipulating mind perception through manipulation of the perceiver’s motivations as listed by Waytz, Gray, Epley,

and Wegner (2010), rather than qualities in the perceiver. In addition, there should be more investigation into not only what motivates an individual to perceive mind but also what could be some motivations to see less mind in an individual. An inability to manipulate mind perception through target-focused interventions would not be a very shocking finding because, while the literature on this topic is greatly expanding, it remains relatively new, and many theories are still being tested.

Finally, I advocate for careful ethical considerations while furthering this area of psychological science. This is evident, for instance, in the psychopathy literature. Psychopaths tend to have less mind perception, especially in the experience domain, and it has been hypothesized this may be what allows them to commit heinous acts against their fellow humans (Gray et al., 2011; Gray, Young, & Waytz, 2012). This information should be considered when exploring ways to manipulate and potentially lessen the amount of mind perception a participant feels for a target. Considering that moral education has been found to be effective in adult populations (Schlaefli, Rest, & Thoma, 1985), finding that mind perception can be manipulated in such a way that it can be increased would be highly exciting, as it could facilitate new interventions to treat antisocial tendencies. One such avenue is again proposed by Gray, Young, and Waytz (2012) who proposed mapping mind perception onto dyadic morality. They hypothesized that the experience dimension was related to the dyadic concept of the moral patient (the experiencer). In dyadic morality, wrongdoing can only happen when there is a moral patient, which could account for why psychopaths can commit violent crimes: They fail to see a victim, and therefore fail to see wrongdoing on their part. This is tied in with research that has found that psychopaths understand morally what is right and wrong, but their behavior isn't altered because they're instead choosing the more self-serving utilitarian choices. (Koenigs,

Kruepke, Zeier & Newman, 2011). This is somewhat tied to the notion of a victimless crime, its wrong but in the eyes of the perpetrator no one got hurt so they don't care. In a similar vein, mind perception research could be reversed to teach individuals how to no longer care about the acts they commit against other living and sapient creatures, possibly encouraging otherwise neurotypical individuals to commit heinous crimes that they normally would not commit.

## REFERENCES

- Aaronovitch, D. (2009). *Voodoo Histories: The Role of the Conspiracy Theory in Shaping Modern History*. London: Jonathan Cape.
- Aronson, E. (1999). The power of self-persuasion. *American Psychologist*, *54*(11), 875-884.  
doi:10.1037/h0088188
- Brotherton, R., French, C. C., & Pickering, A. D. (2013). Measuring Belief in Conspiracy Theories: The Generic Conspiracist Beliefs Scale. *Frontiers in Psychology*, *4*.  
<https://doi.org/10.3389/fpsyg.2013.00279>
- Call, J., & Tomasello, M. (2008). Does the chimpanzee have a theory of mind? 30 years later. *Trends in Cognitive Sciences*, *12*(5), 187-192. doi:10.1016/j.tics.2008.02.010
- Cooper, A. (2018, May 24). Six more Sandy Hook families sue broadcaster Alex Jones [News]. Retrieved June 11, 2018, from <https://www.cnn.com/2018/05/23/us/alex-jones-sandy-hook-suit/index.html>
- Douglas, K. M., Sutton, R. M., Callan, M. J., Dawtry, R. J., & Harvey, A. J. (2016). Someone is pulling the strings: hypersensitive agency detection and belief in conspiracy theories. *Thinking & Reasoning*, *22*(1), 57–77. <https://doi.org/10.1080/13546783.2015.1051586>
- Douglas, K. M., Sutton, R. M., & Cichocka, A. (2017). The Psychology of Conspiracy Theories. *Current Directions in Psychological Science*, *26*(6), 538–542.  
<https://doi.org/10.1177/0963721417718261>
- Dyer, H. (2018, May 8). I Watched an Entire Flat Earth Convention — Here’s What I Learned [Science News]. Retrieved June 11, 2018, from <https://www.livescience.com/62506-flat-earth-convention.html>

- Ebersole, C. R., Atherton, O. E., Belanger, A. L., Skulborstad, H. M., Allen, J. M., Banks, J. B., ... Nosek, B. A. (2016). Many Labs 3: Evaluating participant pool quality across the academic semester via replication. *Journal of Experimental Social Psychology*, 67, 68-82. doi:10.1016/j.jesp.2015.10.012
- Factbase Videos. (2017, November 3). InfoWars: Alex Jones Interviews Donald Trump - December 2, 2015 [Video Sharing]. Retrieved June 11, 2018, from <https://www.youtube.com/watch?v=4LeChPL0sLE>
- Gray, H., Gray, K., & Wegner, D.M. (2007). Dimensions of Mind Perception. *Science*, 315(5812), 619. doi: 10.1126/science.1134475
- Gray, K., Jenkins, A. C., Heberlein, A. S., & Wegner, D. M. (2011). Mind Survey. *PsycTESTS Dataset*. doi:10.1037/t64258-000
- Gray, K., Jenkins, A., Heberlein A., Wegner, D.M., & Smith, E. (2011a). Distortions of mind perception in psychopathology. *Proceedings of the National Academy of Sciences of the United States of America*, 108(2), 477. doi: 10.1073/pnas.1015493108. Retrieved from <http://www.jstor.org/stable/25770806>
- Gray, K., Knobe, J., Sheskin, M., Bloom, P., & Barrett, L. F. (2011b). More than a body: Mind perception and the nature of objectification. *Journal of Personality and Social Psychology*, 101(6), 1207-1220. doi:10.1037/a0025883
- Gray, K., & Wegner, D. M. (2012). Feeling robots and human zombies: Mind perception and the uncanny valley. *Cognition*, 125(1), 125-130. <https://doi.org/10.1016/j.cognition.2012.06.007>
- Gray, K., Young, L., & Waytz, A. (2012). Mind Perception Is the Essence of Morality. *Psychological Inquiry*, 23(2), 101-124. doi:10.1080/1047840x.2012.651387

- Kay, A. C., Gaucher, D., Napier, J. L., Callan, M. J., & Laurin, K. (2008). God and the government: Testing a compensatory control mechanism for the support of external systems. *Journal of Personality and Social Psychology*, *95*(1), 18–35.  
<https://doi.org/10.1037/0022-3514.95.1.18>
- Kay, A., Moscovitch, D., & Laurin, K. (2010). Randomness, Attributions of Arousal, and Belief in God. *Psychological Science*, *21*(2), 216–218. doi: 10.1177/0956797609357750
- Koenigs, M., Kruepke, M., Zeier, J., & Newman, J. P. (2011). Utilitarian moral judgment in psychopathy. *Social Cognitive and Affective Neuroscience*, *7*(6), 708-714.  
doi:10.1093/scan/nsr048
- Noguera-Sepulveda. (2017). Unpublished Pilot 1.
- Noguera-Sepulveda. (2018). Unpublished Pilot 2.
- Norenzayan, A., Gervais, W. M., & Trzesniewski, K. H. (2012). Mentalizing Deficits Constrain Belief in a Personal God. *PLoS ONE*, *7*(5). doi:10.1371/journal.pone.0036880
- Rai, S., and Diermeier. “Corporations Are Cyborgs: Organizations Elicit Anger but Not Sympathy When They Can Think but Cannot Feel.” *Organizational Behavior and Human Decision Processes*, vol. 126, 2015, pp. 18–26.,  
doi:10.1016/j.obhdp.2014.10.001.
- Rohrer, J. M. (2018). Thinking Clearly About Correlations and Causation: Graphical Causal Models for Observational Data. *Advances in Methods and Practices in Psychological Science*, *1*(1), 27–42. <https://doi.org/10.1177/2515245917745629>
- Rosset, E. (2008). It’s no accident: Our bias for intentional explanations. *Cognition*, *108*(3), 771–780. <https://doi.org/10.1016/j.cognition.2008.07.001>

- Schlaefli, A., Rest, J. R., & Thoma, S. J. (1985). Does Moral Education Improve Moral Judgment? A Meta-Analysis of Intervention Studies Using the Defining Issues Test. *Review of Educational Research*, 55(3), 319. doi:10.2307/1170390
- Solomon, R. L. (1949). An extension of control group design. *Psychological Bulletin*, 46(2), 137-150. doi:10.1037/h0062958
- Tharp, M., Holtzman, N. S., & Eadeh, F. R. (2017). Mind Perception and Individual Differences: A Replication and Extension. *Basic and Applied Social Psychology*, 39(1), 68–73. <https://doi.org/10.1080/01973533.2016.1256287>
- Wilkinson, F. (2017, March 17). Hot for Truther: Inside the Website Where Conspiracy Theorists Find Love [News]. Retrieved June 11, 2018, from [https://broadly.vice.com/en\\_us/article/d3g78j/hot-for-truther-inside-the-website-where-conspiracy-theorists-find-love](https://broadly.vice.com/en_us/article/d3g78j/hot-for-truther-inside-the-website-where-conspiracy-theorists-find-love)
- Waytz, A., Gray, K., Epley, N., & Wegner, D. M. (2010). Causes and consequences of mind perception. *Trends in Cognitive Sciences*, 14(8), 383-388. doi:10.1016/j.tics.2010.05.006
- Yeager, D. S., & Walton, G. M. (2011). Social-Psychological Interventions in Education. *Review of Educational Research*, 81(2), 267-301. doi:10.3102/0034654311405999

## APPENDIX A

## SCRIPT

[Before participants enter computers should be ready with the surveys and manipulations pulled up on their computers]

Welcome and thank you for taking the time to participate in the study my name is <blank>. I will be facilitating this research today.

If you have not done so already, please sign in so that your participation can be recorded. Please note that this data is being recorded anonymously and your names will not be attached to your data in any way.

Please begin by answering the Questionnaires on your computer screens and I would like to remind you at this time that your answers are completely anonymous and your name will not be at all tied to your answers. If any time any of these questions make you feel uncomfortable, you are welcome to skip them without any sort of penalty. It is extremely important that you answer as honestly, and to the best of your ability as possible. If you are ready you may now begin the questionnaire.

**[Wait until they have completed the pre-test. Pull up the treatment on a separate page.]**

You will now begin a guided portion of out the activity. Please listen to and follow the direction on screen.

[For treatment group] While writing out your responses to the questions please do not simply re-write the same thing over and over and please write at least 20 words for each prompt.

**[Wait until they have completed the manipulation]**

Now that you've completed the guided portion of the activity please answer the following questions as honestly as you can and to the best of your ability. Again, if any question makes you uncomfortable you may skip it without penalty.

**[Wait until they have finished the post-test measures]**

You have completed the experiment thank you for your time and effort on these tasks. If you have any further questions, feel free to email the primary researcher, the email is included in the

handout. Additionally, if you feel distressed by the study, you may contact the GSU Counseling Center, or the National Suicide Prevention Hotline. Both Services are free and are equipped to handle questions and concerns about emotional distress.

[Give Handout]

Please make sure you have signed in. You can expect credit to be given by the end of the day. Thank you and have a wonderful day.

## APPENDIX B

### Handout

If you have any further questions, feel free to email the primary researchers at [JNSpsychology1@gmail.com](mailto:JNSpsychology1@gmail.com). Additionally, if you feel distressed by the study, you may contact the GSU Counseling Center at 912-478-5541, or the National Suicide Prevention Hotline at 1-800-273-8255. Both Services are free and are equipped to handle questions and concerns about emotional distress.

APPENDIX C  
MANIPULATION

I would like you to think about your own mind. Consider your ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider your autonomy, your ability to make decisions, to act morally, to be in control of your own actions and to alter the world around you. Consider how this might shape your interactions with your own mind. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about another person's mind. Consider the person's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the person's autonomy their ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this person. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a dog's mind. Consider the dog's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the dog's autonomy the dog's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this dog. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about an infant's mind. Consider the infant's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the infant's autonomy the infant's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this infant. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a corpse's mind. Consider the corpse's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the corpse's autonomy the corpse's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this corpse. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a fictional character's mind. Consider the fictional character's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the fictional character's autonomy the corpse's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this fictional character. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a God's mind. Consider God's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider God's autonomy God's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with God. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a robot's mind. Consider the robot's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the robot's autonomy the robot's ability to make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this robot. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

I would like you to think about a tree's mind. Consider the tree's ability to experience things, to enjoy things, to be hurt, to want, to remember. Consider the tree's autonomy the tree's ability to

make decisions, to act morally, to be in control of their own actions and to alter the world around them. Consider how this might shape your interactions with this tree. Please take a moment to consider these things.

[1 minute 30 second pause where participants will type out their thoughts]

END SURVEY