

ANOTHER LOOK AT MILGRAM: THE ROLE OF REFLECTION TIME AND NORMATIVE
INFORMATION IN OBEDIENCE TO AUTHORITY

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by
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Abstract

ANOTHER LOOK AT MILGRAM: THE ROLE OF REFLECTION TIME AND NORMATIVE INFORMATION IN OBEDIENCE TO AUTHORITY

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There is still a limited understanding of the exact processes underlying Milgram's (1963) classic paradigm. In this study, 65% of participants were willing to administer a 450 volt shock to an alleged other participant following the orders of an authority figure. Burger (2014) suggested that there are four aspects of Milgram's (1963) studies which led people to obey to such great lengths: the incremental nature of the task, the opportunity to diffuse responsibility, the use of normative information, and the limited opportunity to reflect. This study aimed to investigate the effect of normative information and time to reflect on obedience to authority. Additionally, we sought to extend Milgram's paradigm to investigate people's willingness to inflict psychological pain on others by using a Cyberball paradigm where participants were instructed to ignore a fictitious participant. The experiment had a 2 (normative information) x 2 (time to reflect) design. The normative information manipulation indicated either most people completed the study (strong normative information) or that most people did not complete the study (weak normative information). Additionally time to reflect was manipulated by providing

participants with either limited (2 seconds) or ample time (4 seconds) to reflect on their decisions. We predicted that those given normative information indicating that most people complete the task would complete more rounds of the game than those who were given information indicating that most people did not complete the task. We predicted that participants who had a short time to reflect would ignore the fictitious player for more rounds of the game than those who had a long time to reflect. We also predicted that there would be an interaction such that people who had strong normative information and a short time to reflect would have the highest level of obedience and those who had weak normative information and a long time to reflect would have the lowest level of obedience. There was no main effect of normative information or reflection time and also no interaction. This suggests that these variables may not be as integral to our understanding of obedience to authority as originally anticipated.

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Another Look at Milgram:

The Role of Normative Information and Reflection Time in Obedience to Authority

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Abstract

Burger (2014) suggested that there are four aspects of Milgram's (1963) studies which led people to obey to such great lengths: the incremental nature of the task, the opportunity to diffuse responsibility, the use of normative information, and the limited opportunity to reflect. This study aimed to investigate the effect of normative information and time to reflect on obedience to authority. We sought to extend Milgram's paradigm to investigate people's willingness to inflict psychological pain on others by using a Cyberball paradigm where participants were instructed to ignore a fictitious participant. The experiment had a 2 (normative information) x 2 (time to reflect) design. The normative information manipulation indicated either most people completed the study (strong normative information) or that most people did not complete the study (weak normative information). Additionally time to reflect was manipulated by providing participants with either limited (2 seconds) or ample time (4 seconds) to reflect on their decisions. We predicted that those given normative information indicating that most people complete the task would complete more rounds of the game than those who were given information indicating that most people did not complete the task. We predicted that participants who had a short time to reflect would ignore the fictitious player for more rounds of the game than those who had a long time to reflect. We also predicted that there would be an interaction such that people who had strong normative information and a short time to reflect would have the highest level of obedience and those who had weak normative information and a long time to reflect would have the lowest level of obedience. There was no main effect of normative information or reflection time and also no interaction. This suggests that these variables may not be as integral to our understanding of obedience to authority as originally anticipated.

Keywords: obedience to authority, normative information, reflection time, Milgram

Another Look at Milgram: The Role of Normative Information and Reflection Time in
Obedience to Authority

After the Holocaust, people were left wondering how such horrid crimes against humanity could possibly occur. For years, civilians, global leaders, and researchers from various disciplines attempted to explain the dynamics of such circumstances that could lead to such devastation. One of these people was Stanley Milgram. His classic study in 1963 showed that seemingly anyone was capable of morally questionable activity when under the influence of a powerful authority figure. In his classic study, 65% of participants administered bogus shocks to a confederate up to the maximum of 450 volts (Milgram, 1963). This was past the point of the confederate extensively protesting the shocks and finally ceasing responding, suggesting a loss of consciousness. Hannah Arendt (1963) famously described these results as showing the “banality of evil,” insinuating that most humans have the capacity for evil under the right pressures. Namely, the pressures of an authority figure.

These results fascinated not only the scientific community, but also the rest of the world for the past 50 years. However, despite the overwhelming interest in obedience to authority, there are still many unanswered questions regarding both Milgram’s original studies and obedience more generally. Researchers continue to analyze the many variations of Milgram’s original experiment; however, there is a lack of conceptual replication or exploration of these conclusions. While Milgram’s original paradigm could not be conducted under current ethical research standards, there have been a few efforts to expand his findings utilizing more restrictive and practical procedures. Despite a lack of empirical replications, many researchers have posited underlying mechanisms that explain why an overwhelming number of people obeyed in Milgram’s study.

One such analysis by Burger (2014) identified four different elements in Milgram's study that may explain participants' obedience: (1) the incremental nature of the task, (2) the opportunity to diffuse responsibility to the experimenter, (3) normative information utilized due to the novelty of the situation, and (4) the limited opportunity to reflect before behaving. Burger claims that these four factors led people to obey to such an extreme degree, but there is only limited empirical evidence to support his claim. The existing evidence informing each of these influences is reviewed below.

First, Burger proposed that the incremental nature of Milgram's paradigm led to people obeying to extreme degrees. Participants started at very low shocks increasing by 15 volts every time. At the beginning, participants received little to no feedback from the confederate when he received the shocks, with the first somewhat distressed noise coming from the participant five shocks into the procedure. By the time participants were faced with the large 450 volt request, they had already obeyed 29 other smaller requests.

Burger explained this in terms of the foot-in-the-door phenomenon—the tendency for people to be more likely to agree to complete a large request if they first comply with a smaller request (Freedman & Fraser, 1966). This phenomenon is relatively consistent across situational contexts (Burger, 1999), and some research suggests that this type of compliance increases when participants believe they are being helpful (Fointiat, 2006; Goldman, Seever, & Seever, 1982). Examining Milgram's paradigm, particularly the experimenter's instructions to continue, as appeals to science suggest that participants may have construed their behavior as supporting science, increasing obedience (Haslam, Reicher, & Birney, 2014).

Previous research on the foot-in-the-door phenomenon has found that an unusual initial task increases the likelihood that participants will comply with the second larger task (Dolinski,

2012). Asking participants to shock another person would arguably constitute a strange request. Analyzing Milgram's experiment as a series of increasingly difficult requests potentially benefitting some greater achievement, it becomes evident that this is an example of the foot-in-the-door phenomenon. This may also contribute to our understanding of obedience levels in Milgram's variations of his classic study. While obedience did drop significantly when the experimenter sat farther away or when results were telephoned in, 65% and 20% of participants, respectively, still obeyed until the final shock. While the authority figure does contribute to obedience in this paradigm, it is likely not the only factor influencing people's decisions to obey.

Burger's (2014) second factor outlined in his argument is the opportunity for participants to escape responsibility for their actions. Milgram's Teachers had the opportunity to place responsibility for what occurred during the experiment on the Experimenter. Indeed, many participants in Milgram's study explicitly asked who would take responsibility and would only go on after the Experimenter said he was responsible. Diffusing responsibility is one way to reduce cognitive dissonance associated with performing a counterattitudinal behavior (Gosling, Denizeau, & Oberlé, 2006). This suggests that people may not experience as much anxiety as one would expect while administering extreme levels of shock to an innocent victim due to reduced cognitive dissonance.

Additionally, in variations of Milgram's original study where the experimenter was farther away from the participant, obedience decreased (Milgram, 1974). Research in other areas shows that spatial proximity has the power to alter one's preferences or choices (Chae, Li, & Zhu, 2013; Xu, Shen, & Wyer, 2012). This suggests that perhaps participants felt more responsible about the outcomes of the study when the authority figure was farther away. Because participants were farther from another responsible party, they may have had to assume more

responsibility for their decisions. With all of this in mind, it is evident that this element did have a significant contribution to the amount of obedience in Milgram's original study.

The third of Burger's (2014) propositions argues that individuals lacked normative information due to the novelty of the situation. That is, Burger asserted that because participants had likely never experienced a situation similar to Milgram's study before, they were seeking information about which norms operated within this context. Thus, participants were relying on the authority figure's expertise rather than simply obeying orders.

Burger describes two variations of Milgram's studies to further support his claim. The first of these involved two experimenters simultaneously conducting the experiment who appeared to have the same status (Milgram, 1974). One experimenter gave the same prods to continue the study that were given in the classic study; however, the second experimenter gave participants instructions to stop at 150 volts. Only one participant in this variation administered any more shocks after the instructions at the 150 volt mark, and this participant only administered one more shock. However, this does not necessarily illustrate that participants in this variation were utilizing normative information to make a decision. Since participants here were provided with a set of conflicting information to try to interpret, they may simply have been processing the information differently to solve the discrepancy.

Previous research has shown that people process conflicting information differently from how they process congruent or neutral information (Kadosh, Kadosh, Henik, & Linden, 2008). Additionally, placing conflicting information closely in proximity increases the likelihood that people process the information deeply (Grüninger, Specht, Lewalter, & Schnotz, 2014). In this variation of Milgram's study, the two conflicting sets of instructions were presented close together. Essentially, rather than participants using the second experimenter's instructions as

normative information, an alternative explanation for the findings is that participants presented with the conflicting information in close proximity were thinking differently about the situation, which caused them to arrive at the conclusion that they should terminate their participation.

Burger (2014) also referenced a variation involving two other confederates acting as fellow teachers along with the participant, to illustrate his point regarding normative information driving obedience levels. The situation was set up such that the two confederates read the word pairs and announced whether they were correct or not, and the real participant was responsible for pressing the shock levers. However, once they reached 150 volts one of the confederate teachers refused to continue participating, and at 210 volts the other confederate also quit participating. In this Milgram variation, only 10% of participants continued to the maximum shock value in comparison to 65% of participants in the original study. While this might be due to the two confederates providing normative information about what most people do when faced with this situation, because the participant witnessed their withdrawal first hand, this effect cannot be disentangled from the influence of modeling.

Albert Bandura (1965) famously illustrated that when children were exposed to a session of an adult interacting with a Bobo doll, they engaged in behaviors that they had seen the adult doing when they were given the opportunity to play with the doll. Further, children copied more of the behaviors they witnessed the adult doing when the adult was rewarded for their behavior. This concept is known as vicarious learning. Recent research continues to find evidence indicating vicarious learning occurs in many areas, including social fear in children (Askew, Hagel, & Morgan, 2015). Vicarious learning can be easily translated to the variation of Milgram's paradigm in question. The two confederates who quit did not receive any form of punishment when they did so. In fact, they experienced negative reinforcement since the aversive

situation in which they were placed was removed. Seeing the termination behavior of the confederates increased the likelihood of the behavior being modeled. Additionally, in Burger's (2009) replication of Milgram's classic study, he did not find an influence of normative information, which was manipulated through a modeling condition.

Given previous examinations of the effect of normative information have been confounded with possible effects of modeling or depth of processing, a more thorough examination of normative information is necessary in order to validate its role in obedience. There are two different types of normative information, which provide alternative information: injunctive norms and descriptive norms (Deutsch & Gerard, 1955). Injunctive norms are about what one thinks they should do based upon social norms or moral values, while descriptive norms provide information about what others actually do. Thus, in Milgram's classic study, participants would be searching for normative information regarding how other people behaved in this new situation. Previous research shows that descriptive norms influence behavior more than injunctive norms do, including the purchase of eco-friendly products (Demarque, Charalambides, Hilton, & Waroquier, 2015), gambling behavior (Meisel & Goodie, 2014), fruit consumption (Stok, Ridder, Vet, & Wit, 2014), and speeding intentions (Cestac, Paran, & Delhomme, 2014). If people had access to descriptive norms, this should change their behavior in this paradigm. If participants were using normative information to make the decision to keep shocking, there should have been a decrease in the strength of shocks that people were willing to administer if they were provided with information that most other people did not complete the study (a descriptive norm). Therefore, providing participants with clear normative information should shed light on the role that descriptive norms play in obedience.

The final piece of Milgram's (1963) study that Burger (2014) outlines is the limited opportunity to reflect on the part of participants. Burger proposed that participants chose to engage in the most salient behavior since they did not have time to ponder their decision; however, the element of time was not closely controlled for or reported by Milgram, nor is there a comparison group that had a different amount of time to make a decision.

Research suggests that limiting time alters the way in which people make decisions. Ordóñez and Benson (1997) examined the effects of a time constraint when judging the attractiveness of gambles and making wagers for gambles. The results of this study showed that participants were less likely to engage in cognitive tasks, which was measured using the Need for Cognition scale, when giving attractiveness ratings for gambles and used the same strategy as they did for coming up with their buying price. When the time constraint was removed, participants used a different strategy for the attractiveness rating task. Additionally, Betsch, Fiedler, and Brinkmann (1998) conducted a study using a computerized trucking game. Participants had a few rounds to become acquainted with the game, then during the final round participants were either placed under a time constraint or the task was altered. Participants who were placed under time constraint were more likely to continue with the routine; however, participants who were placed in a novel situation took a longer time to make decisions, changed their routine, and reported thinking more about their decisions. This suggests that participants may need a long time to make informed decisions in a novel task, and that restricting the amount of time allowed to make a decision might create a reliance on other strategies. Given that Milgram's paradigm would satisfy the criteria for a novel circumstance, limiting the amount of time participants had to make a decision about their compliance would likely impact their willingness to do so.

Additionally, research has also investigated how reaction times vary across decisions based on either cooperative or selfish behavior. Evans, Dillon, and Rand (2015) found that decisions which are intermediately cooperative and selfish, rather than completely cooperative or selfish, took longer to make. They also found that participants who were under a time pressure engaged in more cooperative behavior than those who were told to stop and think about their decision first. Recent investigations of the Milgram paradigm have found evidence that obedience in the Milgram paradigm can at least be partially attributed to the experimenter's appeals to science due to the prompts the experimenter made when participants wished to quit (Haslam et al., 2014). Therefore, this response to an appeal to science can be seen as a cooperative behavior. This may translate to a dilemma faced by the participants between making a choice to act selfishly to end their discomfort regarding the situation or to act cooperatively to contribute to science. Thus, the moral ambiguity of this situation may indeed warrant needing more time to make a well-informed decision than participants were given. This can be illustrated by the fact that more participants picked the cooperative option to continue with the study when given less time to decide, as was seen in Evans et al. (2015).

The existing research clearly demonstrates the relevance of two of Burger's (2014) proposed elements underlying Milgram's findings: the incremental nature of the task and the opportunity to diffuse responsibility to the experimenter. However, Burger's other two proposals are less supported by the literature. Indeed, normative information cannot be disentangled from several other concepts (e.g. depth of processing and behavior modeling), and reflection time has yet to be systematically investigated. Therefore, the current study seeks to empirically test these two factors and determine their influence on obedience. Further, to have a more complete understanding of obedience to authority in general, a new paradigm was created to assess

obedience to authority that allowed for the isolation of the two variables of interest. Participants engaged in a virtual game-playing paradigm where they were instructed to ostracize another alleged participant while facing increasingly intense protests.

Due to ethical reasons, it is difficult to consider conducting an exact replication of Milgram's studies, yet despite this there are very few alternate paradigms used to study this phenomenon. Some recent paradigms have moved the study of obedience to authority and Milgram's original procedure into the virtual world (Dambrun & Vatiné, 2010). The current study adopts a virtual paradigm that used a modified version of the Cyberball program (Williams, Yeager, Cheung, & Choi, 2012) to design a more ethically sound conceptual replication. Cyberball is traditionally used to study social ostracism and has been shown to produce large effects of ostracism (Hartgerink, van Beest, Wicherts, & Williams, 2015). For the purposes of this study, I instructed people to ostracize another player to mimic the situation of participants administering painful shocks to someone from the original Milgram paradigm. Moreover, past research has shown that participants who are placed in a situation where they are instructed to ostracize another player show elevated levels of negative affect, which are comparable to those experienced by participants who are ostracized (Legate, DeHaan, Weinstein, & Ryan, 2013). More specifically, the ostracizing participants felt equal amounts of distress and more shame and guilt than ostracized participants. Therefore, this paradigm is likely to elicit levels of anxiety and discomfort comparable to Milgram's original studies.

We examined three hypotheses to address the potential effects of the variables of interest as applied to obedience to authority. The first hypothesis was that participants who were exposed to normative information indicating that most people finished the task would complete more rounds of the Cyberball paradigm than those who were given normative information indicating

that most people did not complete the task. The second hypothesis was that those who were given a short amount of time to reflect would complete more rounds of the Cyberball paradigm than those who had a long amount of time to reflect. The final hypothesis was that these manipulations would have a multiplicative effect to reflect these factors combining and contributing to extreme levels of obedience in Milgram's classic study. We expected an interaction between reflection time and normative information such that those provided with normative information indicating that most people did not complete the task and have a long time to reflect would have the lowest obedience, while those who had information indicating that most people did complete the task and had a short time to reflect would have the highest obedience. We expected the remaining two conditions to have comparable levels of obedience.

Method

Participants

This study was approved by the Appalachian State University Institutional Review Board on October 17, 2016 (Appendix A). Participants were 128 students from Appalachian State University recruited via the Psychology department online recruitment pool. The average age of participants was 18.90 ($SD = 1.41$). Our sample included 65 males, 62 females, and 1 who identified as other. The demographic breakdown was as follows: 68.7% white, 4.1% black, 5.4% Hispanic or Latino, 5.4% Asian or Pacific Islander, and 3.4% multiracial. Participants were limited to Introduction to Psychology students to minimize exposure to the classic Milgram studies.

Materials

For this study, we used Cyberball 5.0 run on PC computers in a lab. Demographic information was completed through a survey hosted on Qualtrics.

Procedure

This experiment used a 2 (strong vs. weak normative information) x 2 (short vs. long time to reflect) between-subjects design, and participants were assigned to one of four conditions. The time to reflect variable had two levels. Participants either had a short time to make their decision about obeying (2 seconds), or were forced to wait a long time (4 seconds) to make a decision. The normative information variable had two levels. Participants either received information indicating that most people complete the task to the end or that most people do not complete the task to the end.

Before the lab session of the study, participants completed demographics information online. Then in the in-person lab session, participants were run in a group setting with 18 computers and up to 10 participants at the same time. Participants engaged in individual games of a modified version of the Cyberball paradigm. There was only one true participant in each game; however, participants were led to believe that there were two others playing the game along with them. Participants were assured that the people they were playing with were not in the same room as them, but were in another computer lab elsewhere in the building because they needed to receive different instructions. Participants were instructed that they were going to be responsible for ignoring a fellow participant for a study looking at the effects of social ostracism. As our manipulation of normative information, before starting the session, the experimenter made a seemingly offhand comment indicating that either most people did or most people did not complete the experiment. When the session was about to begin, the experimenter said, "Please follow the instructions until the end. Most participants today have (not) been able to. I think we've had about 85% (15%) of people following all of the instructions."

Participants then started a round of Cyberball and were instructed to ignore the target for six passes. Each subsequent round, participants were instructed to ignore the target for an increasing number of passes. Participants had the opportunity to send one statement to the alleged other participants after each round to create an opportunity for the ostracized target to provide feedback to the participant. Pre-programmed statements from the target were modeled after the protests of the learner in Milgram's original study and became increasingly more intense every round. These statements appealed to being emotionally harmed to mimic the physical pain present in Milgram's original study. This process repeated for 15 rounds. After completing the game participants were debriefed.

To create the statements of distress from the ostracized participant, three undergraduate research assistants engaged in three mock rounds of 15 passes of ostracism in a group chat format, where each person alternated being the ostracized person every round. Similar statements were removed from the pool. The collective 47 statements by the ostracized individual and 51 statements by the non-ostracized individuals were rated by an independent set of 107 undergraduates for emotional hurt and anger on a six-point scale. Then, statements were rank-ordered based upon emotional hurt. To select the final 15 statements for the ostracized individual, 3 statements were selected for each one-point interval on the 6 point scale, also based upon their minimization of anger (Appendix B). To select the final 20 statements for the non-ostracized individual, 15 statements of the lowest emotional hurt and anger were selected (Appendix C).

Results

In the chat statements given by participants during their Cyberball game, 22 participants reported suspicions that the other players in their game were not real people. A chi-squared

analysis revealed that significantly more men ($n = 17, 77.3\%$) reported suspicion than women ($n = 4, 18.2\%$), $\chi^2(2, N = 128) = 13.51, p = .001$. There were no differences in the results when these participants were excluded, so the reported analyses include all participants. Additionally, no differences were observed when participants who disobeyed immediately were removed from analysis, so the reported analyses include all participants. As our measure of obedience, the first round that participants passed the ball to the ostracized player was recorded. For participants who obeyed the entire time, the number 16 was recorded indicating that they obeyed through all 15 rounds. The variable had a bimodal distribution where most people either disobeyed immediately or obeyed until the very end (See Figure 1). Approximately 40% of participants disobeyed immediately and another 40% of participants obeyed until the end. It is possible that this distribution of this variable influenced the outcomes of my hypothesis tests. To test the three hypotheses, I ran a 2 x 2 ANOVA with normative information and time to reflect as the factors and obedience as the outcome.

I first tested the hypothesis that those who received normative information indicating that most people followed all directions during the study would obey for more rounds than those who received normative information indicating that most people did not follow all directions during this study. To measure disobedience, the first round that participants disobeyed and passed to the ostracized player was recorded. The number 16 was recorded for participants who obeyed throughout the entire game. There was no main effect of normative information such that those who were given strong normative information ($M = 7.27, SD = 7.09$) on average disobeyed at the same round as those who were given weak normative information ($M = 7.76, SD = 7.01$), $F(1, 139) = 0.19, p = .66, \eta^2_{\text{partial}} = .001$. This does not support my hypothesis and suggests that there were no differences in obedience between those receiving strong or weak normative information.

The next hypothesis examined was that those who were given a short time to reflect should obey more than those who had a longer time to reflect. There was no main effect of time such that those who had a short time to reflect ($M = 7.37, SD = 7.00$) on average disobeyed at the same round as those who had a long time to reflect ($M = 7.73, SD = 7.03$), $F(1, 139) = 0.11, p = .74, \eta^2_{\text{partial}} = .001$. This does not support my hypothesis and suggests that there were no differences in obedience between those given a short versus long time to reflect.

The final hypothesis examined was that there would be an interaction between reflection time and normative information such that those provided with normative information indicating that most people did not complete the task and had a long time to reflect would have the lowest obedience, while those who had information indicating that most people did complete the task and had a short time to reflect would have the highest obedience. We expected the remaining two conditions to have comparable levels of obedience. There was no interaction between normative information and time to reflect, $F(1, 139) = 0.53, p = .47, \eta^2_{\text{partial}} = .004$ (See Table 1). This does not support our hypothesis and suggests that normative information impacted participants the same regardless of the level of the reflection time variable.

Discussion

Despite the popularity of Milgram's (1963) classic obedience study, there is still not a complete understanding of the factors influencing people's decision to obey authority. To explain participants' extreme willingness to obey authority in Milgram's study, Burger (2014) proposed that there were four elements contributing to obedience: the incremental nature of the task, the opportunity to diffuse responsibility, the use of normative information, and the amount of time people had to make decisions. The evidence supporting the link between the incremental nature of the task and opportunity to diffuse responsibility was clearly explained and supported;

however, the evidence for the second two elements was not as supported in the literature. I designed this study to empirically test the effect of normative information and reflection time in obedience to authority. I also wanted to apply obedience to a novel paradigm to determine if elements of Milgram's classic study still impacted obedience in a different scenario. Participants' obedience did not depend on whether they were told most people did follow all instructions or that they did not, nor whether they had a long or short time to make decisions. Additionally, these variables did not interact, so obedience was virtually the same across all conditions.

There are a few elements about this study to consider when interpreting the results. The first is that while this paradigm has similar features, it is not an exact replication of Milgram's paradigm. We chose a modified Cyberball paradigm to eliminate some of the ethical concerns associated with Milgram's classic study. Past research has also shown that when people are ostracized using a Cyberball game they show increased negative affect (Hartgerink et al., 2015), as well as distress levels that are comparable to participants who are ostracized (Legate et al., 2013). However, participants in this study did not report being distressed in their comments during the game nor in their behavior during the lab sessions. This lack of overtly demonstrated concern suggests that participants may not have been engaged in the game or that this particular situation was not stressful enough to cause anguish.

One of the most salient ways this study differed from Milgram's was in its reliance on causing emotional pain rather than physical pain. However, it is uncertain whether the idea of causing emotional pain causes comparable levels of anxiety as the idea of causing physical pain. Research has shown that emotional pain and physical pain have many physical and neurological similarities (Flaskerud, 2011; Rainville, Duncan, Price, Carrier, & Bushnell, 1997; Tölle et al., 1999) despite disagreement regarding whether or not this overlap implies that these are shared

mechanisms (Eisenberger, 2015). One potential way to resolve this issue could be accomplished is by using sound blasts as a way of inflicting discomfort. Previous research has used this method to study aggression and social exclusion (Twenge, Baumeister, Tice, & Stucke, 2001), which suggests that this could be a viable way to measure someone's willingness to inflict harm on another person while obeying authority. By using this simple and ethical paradigm, differences between willingness to inflict this more physical pain and emotional pain can be observed.

While there was variation in when people decided to stop obeying the experimenter, these same distributions of variance may not apply to potentially more stressful situations like the ones participants were presented with in Milgram's original studies. While elevated levels of anxiety have been associated with better decision making (Kirsch & Windmann, 2009), the role between anxiety and decision making is not clear when the situation is ambiguous. Increased levels of anxiety may cause people to simply obey or think more cautiously about their actions and disobey the experimenter sooner. Further research should be conducted to confirm what effects elevated anxiety levels have on obedience to authority in order to better inform our understanding of the construct as a whole and also to refine its application to real-world problems.

Another reason why people may not have reacted to the ostracized player's pleas is that perhaps they were not intense enough. In Milgram's classic study, there were a few key points where most people tended to drop out (e.g., when the learner stopped answering questions). We were only able to recreate people's disobedience at the start of the paradigm. Perhaps with some more intense statements from the ostracized player around the middle of the game, similar to the 150-volt point in Milgram's study where the learner starts pleading for help, greater variation in obedience might occur between groups. In the future, increasing the intensity of these pleas for

help could give us a better understanding of the role these different variables may play in obedience to authority.

For the manipulation of normative information, I manipulated descriptive norms rather than injunctive norms which were allegedly operating in Milgram's classic study. However, in this study as well as Milgram's, people were already presented with two sets of competing injunctive norms due to the nature of the study. That is, people were faced with the injunctive norm that they should not harm others and also the norm that they should listen to an authority figure. It is perhaps the case that people's behavior in this study was an artifact of which norm they chose to follow. This could also explain the bimodal distribution of people's responses. The 40% of people who disobeyed immediately were likely following the injunctive norm that they should not harm others; however, 40% of people who obeyed the entire time were likely following the injunctive norm that they should obey authority figures. One potential for future research could be trying to disentangle these two competing norms to examine the true influence of normative information on obedience to authority.

Additionally, there were questions regarding the believability of the scenario. Many people in their messages to other players reported their skepticism and suggested that they knew the other players were not real people. If people were suspicious of the true purpose of the task and knew that the other players were not real, they likely did not take the task seriously. While I did analyze the data excluding participants who indicated suspicion about the other players, it is possible that others who were suspicious did not voice their concerns. However, the consistent results both with and without these data points included suggest that perhaps believability was not the reason differences were not found between our conditions. Future research should focus on trying to maximize the realism of this or similar paradigms. The group in lab setting likely

contributed to some of the skepticism, so using an online platform or confederates may be a good way to resolve this issue.

We also did not investigate the other two variables that Burger claimed had a role in Milgram's original paradigm. Ideally, all four elements should be investigated in isolation and also as they combine and work together. However, this would require a much more complex design and a virtually infeasible number of participants. Keeping this in mind, it would still be useful for future research to fully examine the other two pieces we chose not to include, particularly in a different sort of paradigm from the original studies to further examine generalizability.

While these limitations are all possible explanations for the null results of this study, it is also possible that the two factors examined in this study do not actually contribute to obedience to authority. Even in Burger's (2009) replication of Milgram's classic study, there was not an effect of normative information on obedience. The only explanation offered as to why there were not effects of normative information is a lack of power; however, the lack of differences across both of the current study and Burger's suggests that normative information may not be as important to understanding obedience to authority as originally anticipated, or that the effects associated with them are so small these studies have been unable to detect them. Additionally, the manipulated factors were the ones with the least supporting evidence for their contribution. Therefore, it is conceivable that normative information and reflection time actually have little influence on people's propensity to obey an authority figure.

Although this study suggests that the influence of normative information and time to reflect may not be critical influences on obedience, it still leaves unanswered questions regarding the elements influencing people's willingness to obey an authority figure. Future research should

continue to examine the role of normative information and reflection time in obedience. It would be beneficial to also examine the role of all four of Burger's proposed contributing factors in the same study. If differences are found when the incremental nature of the task and diffusion of responsibility are manipulated and not normative information and reflection time, this would provide stronger evidence that normative information and reflection time do not influence people's willingness to obey authority. Additionally, taking obedience outside of the classic Milgram paradigm is vitally important for a practical understanding of obedience. Future research should focus on creating an obedience paradigm that is novel, believable, and informative. Our understanding of obedience would be significantly enhanced if a new paradigm allowed us to determine the true influence of normative information and reflection time, determine which pieces of normative information influence peoples' behavior, and determine if there are differences in peoples' willingness to inflict emotional and physical harm.

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Table 1

Means and Standard Deviations for Obedience by Reflection Time and Normative Information Conditions

Normative Information		Strong		Weak	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Reflection Time	Short	6.64	7.00	8.07	7.03
	Long	7.94	7.21	7.59	7.07

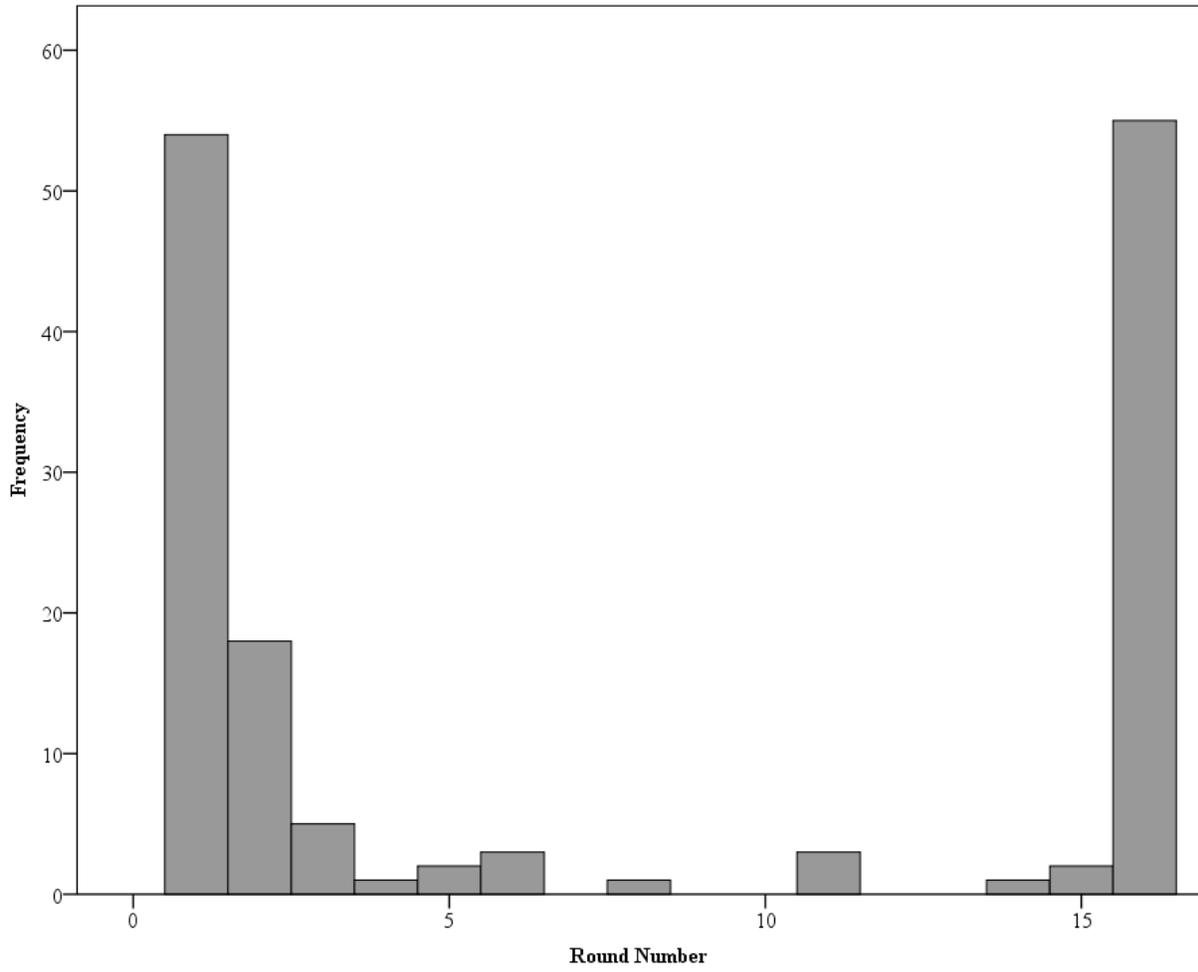


Figure 1. Distribution of rounds where participants first disobeyed.

Appendix A

To: Jessica Udry

Psychology

CAMPUS EMAIL

From: Lisa Curtin, PhD, IRB Chairperson

Date: 10/17/2016

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

STUDY #: 16-0342

STUDY TITLE: Decision Patterns During a Computerized Game

Submission Type: Initial

Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.

Approval Date: 10/17/2016

Expiration Date of Approval: 10/16/2017

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

Appendix B

List of chat statements from ostracized participant and their mean emotional hurt ratings on a scale from 1 to 6. Statements appear exactly as they do in the program, so capitalization and punctuation errors are intentional.

This seems fun.	1.16
I would love to join.	1.42
Can I play with you guys?	1.57
I'm playing too	2.14
I'm still here.	2.66
Can someone pass to me?	2.67
Please let me get the ball	3.14
Did I do something wrong?	3.76
Why isn't anyone passing to me?	3.81
I wish I was included	4.46
You guys really made me feel low	4.92
I am so upset.i just want to play with yall	5.10
You know, being left out really hurts	5.14
This is so hurtful	5.23
Can't anyone see how much this hurts me?	5.31

Appendix C

List of chat statements from the non-ostracized participant and their mean emotional hurt ratings on a scale from 1 to 6. Statements appear exactly as they do in the program, so capitalization and punctuation errors are intentional.

Hello	1.31
What's up?	1.08
You see that catch? :)	1.08
This is fun	1.09
What time is it?	1.08
Nice toss	1.10
Almost there!	1.10
Heads up!	1.10
Hey, catch!	1.13
Do you think we'll be done early?	1.23
At least this is pretty easy.	1.24
here you go	1.26
Caught it!	1.09
How long is this game?	1.42
Woohoo	1.12
here is the ball	1.16
Toss it here	1.30
Your turn again	1.22
I'm so bored	1.42
Yay! Last round!	1.11

Vita

Jessica Udry was born in Greenville, South Carolina, to Michael and Sandra Udry. She graduated from Oglethorpe University in Atlanta, Georgia in May 2015 with a Bachelor of Science in Psychology. In August 2015, she began work on her Master of Arts degree in Experimental Psychology. The M.A. was awarded in May 2017.