

THE EFFECT OF INVISIBILITY ON EXPLOITATIVE BEHAVIORS

by

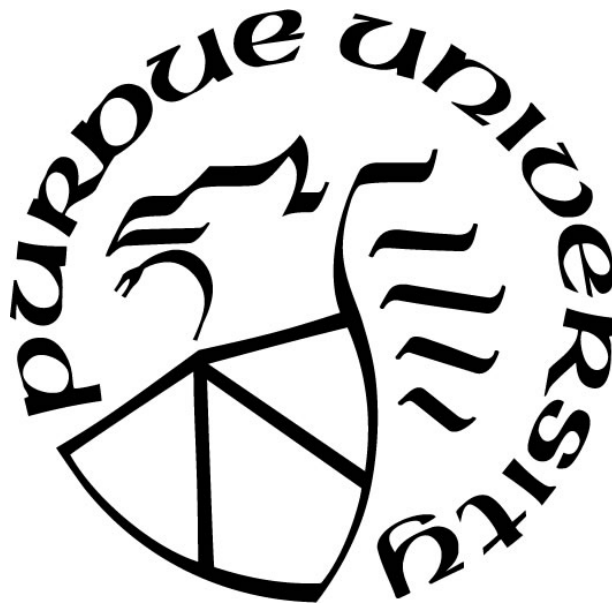
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This is dedicated to God who I give glory and thanks for everything He has done!

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ABSTRACT

Invisibility is an abstract concept captured in film, literature, and social science. It is often desired as a superpower and in fiction portrayed as something that allows self-serving behaviors otherwise prevented by visibility. However, as a social construct used to describe marginalized individuals, it is regarded as largely distressing and disadvantageous. Key to these two opposing conceptualizations is the temporariness or permanence of the invisibility—if temporary and under the control of the individual, it serves the individual’s needs and desires; if permanent, it strips the individual of a sense of meaning and worthiness. The present studies examine invisibility from both perspectives. Studies 1 and 2 demonstrate the desirable aspects of temporary invisibility, but also show that people are less enamored with possessing invisibility when its occurrence is permanent or not under the control of the individual. In Study 3, employing a 3-person video telephony paradigm, I test the impact of ostracism—being ignored and excluded—for one of two motives: *role prescribed*, in which individuals’ roles encourage their social invisibility, and *oblivious*, in which status differentials render those with lower status invisible. The results show that whereas obviously ostracized individuals take advantage of their invisibility to prematurely begin a questionnaire, they also show higher levels of personal distress. These results indicate that being unnoticed may have negative psychological impact on individuals while also affording them the opportunity to engage in self-serving, yet possibly socially undesirable, behaviors.

INTRODUCTION

Can I introduce you to a game titled *Never Have I Ever*? For each of the following statements, place one finger up if you have done what the statement says.

1. Never have I ever heard an idea or comment stated during a conversation and ignored it because the idea/comment was not wise.
2. Never have I ever walked or driven past an individual who is homeless and kept my head down or shifted my eye gaze to the side so that I would not have to acknowledge them.
3. Never have I ever not greeted or acknowledged a custodial staff member in the same way that I would a colleague, student, or close other.
4. Never have I ever been a part of a conversation with another person while talking over a third person who we had not welcomed into the conversation.

If you have lifted a finger for any of the statements above, you have (perhaps) unintentionally made others feel invisible. Let us first discuss the meaning of invisibility.

Williams's (2009) temporal need-threat model of ostracism specifies that ostracism – being ignored and excluded – can be motivated for several reasons, three of which are *punitive*, *role-prescribed*, and *oblivious* (two motives not reviewed here are *defensive*—ostracizing for fear of ostracism by others or retaliation, and “*not ostracism*” – which includes mistaken and unintended ostracism). Punitive ostracism is intentionally given with the goal to punish the targeted individual, but role-prescribed and oblivious ostracism are relatively unintentional. Role-prescribed ostracism occurs when a person occupies a role that, through norms, does not require attention. For example, waiters can be ignored and unnoticeable as they serve their tables and complete task such as refilling water glasses. The act of ignoring waiters is not done to punish them but the waiters (and guests) have mutual understanding that their presence does not need to be acknowledged.

Oblivious ostracism occurs, however, when the target is unnoticed and/or unacknowledged by the source because the target is deemed unworthy of attention (Williams, 2009; Zadro & Gonsalkorale, 2014). There are several reasons why oblivious ostracism could be occurring, but Williams suggests that the most likely reason may be because when individuals feel more

important or valuable in comparison to others around them, they feel little need to acknowledge those who they perceive to be beneath them. More importantly and relevant to the goals of this research, targets of oblivious ostracism feel unnoticed and unimportant. To this point, targets feel figuratively invisible.

Williams felt that oblivious ostracism was more passive, and less intentionally punitive than “punitive ostracism.” Punitive ostracism usually covers situations in which sources are angry or annoyed by the target, and involves intentionally ignoring and excluding targets, either to eliminate the target from the source’s social connections, or to cause the target to correct their own behavior so that the target no longer engages in the unwanted behavior, allowing for reconnection (Hales, Ren, & Williams, 2017). Thus, whereas targets know they are noticed by punitive sources, they feel unnoticed by oblivious sources. Williams argued that the existential threat of feeling unworthy of attention was potentially more distressing to individuals than knowing that others are intentionally going out of their way to punish them through ostracism (Williams, 1997; 2009).

Williams’s model proposes that four fundamental needs are threatened by any form of ostracism—belonging, self-esteem, control, and meaningful existence. Although these four needs often overlap and are combined statistically as indices of psychological distress, some studies have focused on individual needs. This focus has largely been on belonging and self-esteem (Williams, Cheung, & Choi, 2000), and to a lesser extent, control (Warburton, Williams, & Cairns, 2006; Wesselmann, Williams, Butler, & Pickett, 2010; Williams, 2009). Threats experienced during exclusion causes individuals to attempt to fortify their sense of belonging, self-esteem, and control, and when fortification does not lead to re-inclusion, an individual's ostracism state becomes chronic which leads to alienation, depression, and helplessness (Riva, Montali, Wirth, Curioni, & Williams, 2016).

Ostracism and Invisibility

Where does invisibility fit into the Temporal Need Threat Model of Ostracism? Williams places invisibility within the fundamental need of meaningful existence. Meaningful existence incorporates the need to be worthy of acknowledgment. Within the framework of this thesis, I predict that the same psychological side effects that result from punitive ostracism will occur as a result of oblivious ostracism—or feeling invisible; not because one feels punished, but rather, that one is simply not worthy of attention.

In order to benefit from interpersonal relationships, there must be a sense of connection and *belonging* (Baumeister & Leary, 1995). Threats to belonging signal a loss of inclusionary status and social connections. *Self-esteem*, feeling good about oneself, is often signaled by how others regard and respond to the individual. When ignored and excluded, self-esteem suffers (Leary, 2012). Unlike other forms of interpersonally aversive behaviors (e.g., physical or verbal altercations), ostracism offers fewer opportunities for give-and-take interactions; ostracism is more one-sided, and the targeted individual perceives their responses to have no acknowledgement or effects on the source (Williams, 1997; 2009). This, then, strips away a sense of *control* over the interaction. Finally, ostracized individuals feel that their meaningful existence is threatened. They feel less noticed, acknowledged, more invisible, and less worthy of attention. Oblivious ostracism, Williams hypothesized (1997, 2000, 2009), is most likely (of the various motives) to threaten this existential need, because the individual does not even feel that the ostracizers are going out of their way to ostracize; they simply could not be bothered acknowledging the individual's existence because they do not matter; they are not worthy of attention.

Depictions and Conceptualization of Invisibility

"Fiction reveals truth that reality obscures" (p. 39, West, 1957). In literature, movies, and television, writers are free to imagine what it would be like to be literally invisible. In H. G Wells's (1897) classic, *Invisible Man*, he follows the protagonist Griffin, who discovered through experiments a way to become invisible. Griffin's motives were unclear, and he often wavered between curiosity and anger. But his behaviors throughout the book begin with actions that are strong and bad tempered, progressing to those that are completely aggressive. Through Griffin's experiences, we see glimpses of the advantages that physical invisibility could provide.

Decades later, Ralph Ellison's (1955) *Invisible Man* portrayed an African American man who felt invisible because of his lowered status. His protagonist never has a name, placing the character in a space of invisibility, even by his readers. The invisible man complained often about feeling invisible and how it made him feel less than equal and uncertain. Yet, he was still able to gain inside information about White individuals who were scheming against his race. The invisible man was able to do this because he was unnoticed. His invisibility afforded him the opportunity to gain access to otherwise unattainable information. He then used the information he gathered to sabotage a planned riot. This book was one of the first narratives to describe social invisibility and

use it as a description of minority status and it also acknowledged invisibility's potential to bring interpersonal advantages accompanied by threats to the intrapersonal self.

More recently, invisibility has been viewed, similarly to Ellison's use of the term, as a condition felt by marginalized, devalued, or underrepresented groups. For example, Visagie & Swartz (2018) argue that individuals with disabilities are constantly made to feel invisible in South Africa. They suggest that through the experience of microaggressions, discrimination and decreased accessibility to essential items like clean water and a supportive community, South Africans with disabilities are unacknowledged and feel invisible both psychologically and socially. The authors also state that being invisible had led individuals with disabilities to feel overall unvalued, worthless and pitied, which also suggest that invisibility has very negative effects on a person's self-worth. Perhaps also inspired by Ellison's book, Muzafer Sherif exploited the advantages of social invisibility while collecting observations during his and Carolyn Sherif's Robber's Cave Experiment (Sherif et al., 1961). In this study, he dressed like a custodian so that he could observe the boys (his participants) and collect insider descriptions of their conversations, emotions, and plans. Sherif felt that if he had tried to walk in on his participants as a researcher, with the authority that he had, the boys would have spoken less freely until he left. By dressing up as a custodian, however, Sherif witnessed how the boys dismissed his presence and felt free to be themselves. In this way, he exploited his invisibility to achieve research benefits that were otherwise unobtainable.

Except for how it is portrayed in fiction, invisibility is obviously a metaphorical concept (and even in fiction it can be regarded as symbolically metaphorical). As such there are various ways in which invisibility can be regarded, and research in the social sciences show some degree of variety. As discussed, *oblivious ostracism* is a social status form of invisibility in which people feel invisible (and unheard) to others because they are treated as though their status warrants them unimportant and unworthy of attention.

Similar to this, *psychological invisibility*, is used to describe individuals who are acknowledged for external attributes (like their race), but they are not acknowledged for internal attributes (like their character). For instance, Franklin and Boyd-Franklin (2000) discussed the "invisibility syndrome," in which the marginalized individual experiences a "struggle with inner feelings and beliefs that personal talents, abilities, and character are not acknowledged or valued by others" (p. 38). Similarly, Sesko and Biernat (2010) argue that Black women often experience

a sense of invisibility through the intersectionality of their identities. These authors suggest that what exists for Black women is “double jeopardy,” such that both sexism and racism are combined resulting in a feeling that their voice and contribution to society goes unacknowledged. Because of double jeopardy, Black women may constantly struggle with being overlooked and unnoticed by others, placing them into a state of both social and psychological invisibility. In this sense, because of double jeopardy, I argue that Black women can feel obviously ostracized.

Another conceptualization is that of *physical invisibility*, in which a person is cognitively, but not physically presented in a space (this term is not to be confused with the more literal form of physical invisibility depicted in fiction). For example, Knowles and Dean (2018) manipulated experimentally physical invisibility. In Study 1 participants were brought into a lab and placed in front of a two computer monitors and a web camera. They were randomly assigned to the visible or invisible condition; in the visible condition they saw a live video of themselves in the second monitor as they completed different computerized tasks. In the invisible condition, participants saw a video of an empty chair in the second monitor as they completed the computerized tasks. Additionally, in both conditions an experimenter interacted with the participant during the consent and debriefing time. The experimenter’s behavior could be seen in the second monitor for both conditions. The visible condition saw their own interactions with the experimenter in the monitor and the invisible condition saw the experimenter interacting with an empty chair. Knowles and Dean found that not being physically visible led participants to report greater feelings of loneliness based on the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980).

In summary, whereas invisibility is largely regarded as negative in the psychological science literature, fictional portrayals (and Sherif’s use of invisibility) suggest a positive outcome, or at least self-serving side of invisibility. The aim of this research is to demonstrate of this “two-edged sword of invisibility.” It seems highly likely that a major determinant as to whether invisibility is viewed advantageously or disadvantageously is whether or not individuals view it as something that can be turned on or off at-will, or whether it is a permanent condition. Therefore, I will also examine participants’ views of invisibility when they understand it to be used at-will or when visibility is relinquished forever.

STUDY 1

If invisibility is inherently negative, as the social science literature suggests, then one would not expect people to say they would like to be invisible. Thus, in Study 1, I assessed how participants think of and imagine their response to invisibility. I asked participants to freely respond to the question: “what superpowers they would like to have?” Regardless of their answers, I then asked them to imagine that they had the superpower of being invisible, and to explain what sorts of things they would do if they had that superpower. Based on literature and films, my hunch was that invisibility would be one of the most often mentioned superpowers, and that self-serving behaviors otherwise difficult to engage in would be listed as responses to having invisibility as a superpower. I also expected to observe more negative comments when invisibility was a permanent condition.

Method

Study 1

In the first study, I attempt to investigate the conceptualization of invisibility from the layperson’s perspective. I ask participants to list their most-desired “superpowers,” and following that, to consider invisibility, in particular. Additionally, participants were asked to report on how it would feel to be invisible at-will compared to being invisible permanently.

Participants

In total, 161 undergraduate students in an Introduction to Social Psychology Class from Purdue University participated in exchange for extra credit.

Design and Procedure

This is a one factor within-participants study design. The survey was administered online via Qualtrics. Participants completed three questions. In Part 1, they were asked to “Please write the top five superpowers you would like to possess.” In Part 2, superpower of invisibility was manipulated within-participants as something that could be chosen when desired and an individual

can become visible again when they desired, or it was a permanent state of invisibility in which the individual was always invisible. The order of these two imagined states was counterbalanced. Once participants finished the survey they were debriefed and prompted to take a screenshot of the “end of survey” page and send it to their class teaching assistant for class credit.

Results

Listed Superpowers

Two coders together created a list of all superpowers that were listed by participants. The coders then created a list of categories that would encompass all the superpowers listed. Examples of categories included “shape-shifting, mind-reading, spider senses, and super strength.” A total of 56 different superpowers reported by the participants. Coders then calculated the frequency of with which each superpower was listed for each category. 68% of participants listed Invisibility as a top-desired superpower they would want to possess. Other listed superpowers included the ability to fly (63%), teleportation (53%), the ability to read minds (46%) and telekinesis (38%).

Temporary and Permanent Invisibility Condition

Two coders created a list of behaviors reported by participants for imagined temporary and permanent invisibility. Behaviors were coded in one of three categories: self-serving, self-threatening and other. Self-serving behaviors are behaviors that would offer a person any sort of personal advantage. Behaviors that were coded for self-serving included “robbing a bank, spying on a boyfriend to see if he is cheating, pulling pranks on family members and eavesdropping on personal conversations.” Self-threatening behaviors are behaviors that would lead to threats to a person’s self-worth. Behaviors that were coded for self-threatening included the desire to self-isolate from society or family members. The *other* coding category included participants who did not respond to the question (as some participants did not read the prompt and felt the questions were duplicated) or participants who said they would not use the superpower. If a behavioral response was both self-serving and self-threatening, it was coded for both categories. The coding agreement was calculated by taking the number of responses that were coded differently by the two coder and dividing it by the total number of responses. The coder agreement was 0.94.

A McNemar's Chi-Square Test was used to assess whether there is a difference between condition and whether the reported behavior was self-serving or self-threatening (See Table 1). The other category was omitted for this analysis. There was a statistically significant difference in the proportion of reported behavioral types based on condition, $\chi^2 (2, N = 161) = 5.33, p < .001$ indicating that self-serving behaviors were the majority of responses for both types of invisibility but self-threat behaviors being to emerged when imagining permanent invisibility. A chi squared test of goodness fit was performed to examine the popularity between self-serving, self-threatening and other behavioral responses for the temporary imagined state of invisibility. The self-serving response was really popular, so much so that significantly more than a third of people reported it, $\chi^2 (2, N = 161) = 294.35, p < .001$. The popularity of self-serving behaviors was also significantly found when participants imagined permanent invisibility $\chi^2 (2, N = 161) = 210.37, p < .001$. As shown in Table 1, you can also see the emergence of self-threatening behaviors when participants imagine permanent invisibility.

Table 1. Frequencies of Types of Actions for Two Types of Invisibility:
Temporary and Permanent

Condition	Self-Threat	Self-Serving	Other	Total
Temporary	0	154	7	161
Permanent	29	130	10	169
Total	29	284	17	330

Conclusion

To test the notion that, at an abstract level, invisibility was perceived as a desirable ability to possess, participants were asked to report their desired superpowers. Indeed, the majority of the participants listed “invisibility” as one of their top desired superpowers. Further, when asked what they would do if they had the ability to be invisible, self-serving, often exploitative behaviors were listed, consistent with invisibility's portrayal in fiction. However, when asked to consider how they would feel if they were permanently invisible, the reporting of negative feelings and behaviors

increased. This study did not provide participants with any information about what type of invisibility was being assessed, and they reported behavioral responses that aligned with physical invisibility. In fact, significantly more self-serving behaviors were reported for at-will invisibility than permanent invisibility. Significantly more self-threatening behaviors were reported for permanent invisibility compared to at-will invisibility.

Although Study 1 results showed support for the initial positivity associated with invisibility, its affordance of self-serving behaviors, and a more negatively imagined behaviors if the invisibility were permanent, I did not assess imagined emotional responses. Additionally, asking participants to think of “superpowers” could have framed invisibility more positively than would be the case without the superpower designation. In Study 2, I sought to replicate Study 1’s findings without any reference to “superpowers.” I also assessed their imagined emotional responses to both at-will and permanent invisibility.

STUDY 2

As in Study 1, without mentioning superpowers, I asked participants to imagine what it would be like to be able to turn invisibility on and off at will, as well as what it would be like to always be invisible. Along with this, I asked participants to describe the emotions they would feel in connection to temporarily or permanently being invisible. My aims for this study were similar as the aims for Study 1.

Method

Participants

In total, 164 undergraduate students in an Introduction to Social Psychology Class from Purdue University participated in exchange for extra credit. Eight participants were excluded from data analysis from either being under the age of 18 or indicating that they completed the study twice to make sure they received credit. The final sample size included 156 undergraduate students.

Design

The design and procedure were the same as in Study 1. However, there was an additional part added that asked participants to (a) list the emotions they felt when imagining being invisible and having the control to reverse it on command and (b) list the emotions felt when imagining being invisible and not having the control to reverse it on command. Afterwards, participants were debriefed, and granted class credit for their participation.

Results

Temporary and Permanent Invisibility Behavior

Behavioral responses were coded for self-serving, self-threatening and other as in Study 1. The coding agreement was 0.92. A McNemar's Chi-Square Test was used to assess whether there is a difference between condition and whether the reported behavior was self-serving or

self-threatening (See Table 2). The other category was omitted for this analysis. Similar to study 1, there was a statistically significant difference in the proportion of reported behavioral types based on condition, $\chi^2 (2, N = 156) = 19.19, p < .001$ showing self-serving behaviors as the majority and self-threatening behaviors emerging for permanent invisibility. Also similar to Study 1, a chi-square goodness of fit test showed self-serving behaviors were most popular for temporary $\chi^2 (2, N = 156) = 294.35, p < .001$ and permanent imagined invisibility, $\chi^2 (2, N = 156) = 210.37, p < .001$, so much so that significantly more than a third of people reported it.

Table 2. Frequencies of Types of Actions for Two Types of Invisibility:
Temporary and Permanent

Condition	Self-Threat	Self-Serving	Other	Total
Temporary	0	153	3	156
Permanent	19	143	4	166
Total	16	296	7	323

Temporary and Permanent Invisibility Emotions

Two coders created a list of emotional responses reported by participants for imagined temporary and permanent invisibility (See Table 3). The emotions were then coded under three categories: positive, negative or other. Positive coded emotions included responses like “excited, courageous, brave, and happy.” Negative coded emotions included responses like “sad, depressed, and lonely.” Responses were coded in the other category if participants did not answer the question, listed behaviors instead of emotions, or the response did not have a clear meaning. Emotion responses that were both positive and negative were coded under both categories. The coding agreement was 0.93.

Table 3. Frequencies of Types of Emotions for Two Types of Invisibility: Temporary and Permanent

Condition	Positive	Negative	Other	Total
Temporary	150	17	2	169
Permanent	47	143	13	203
Total	202	160	15	372

There was a significant difference in the proportion of reported emotions based on condition, $\chi^2 (2, N = 156) = 159.37, p < .001$. Positive emotions were so popular that more than a third of people reported them for temporary invisibility, $\chi^2 (2, N = 156) = 235.61, p < .001$. Negative emotions were so popular that more than a third of people reported them for permanent invisibility, $\chi^2 (2, N = 156) = 216.18, p < .001$. The other category was also omitted for this analysis.

Conclusion

The primary result in Study 2 was that the thought of being invisible is not necessarily negative. Participants reported wanting to do more self-serving and advantageous behaviors when imagining temporary invisibility. While imagining permanent invisibility, majority of participants still reported self-serving behaviors but there was also an emergence of self-threatening and isolating behaviors. Even when eliminating invisibility as a superpower, participants tend to feel positive towards it if imagining temporary invisibility. Negative emotions were more pronounced when participants imagined permanent invisibility. Therefore, whether invisibility is bad or good to the person is more nuanced than James (and Williams) imagined. People tend to link temporary invisibility to self-serving behaviors like pranking and the fun, secrecy of eavesdropping, and being able to overhear secret conversations. This tendency decreases somewhat when imagining permanent invisibility.

Discussion

Studies 1 and 2 show that invisibility in general may have advantages and that others can recognize that these advantages exist. The results of Studies 1 and 2 stand in contrast to social science theories that claim that the psychological consequences of being invisible will be exclusively negative. In both studies, imagining temporary invisibility led to reports of self-advantaging behaviors and positive emotions. Only, when imagining permanent invisibility did self-threatening behaviors and negative emotions, like being depressed and withdrawing from society, begin to emerge.

In Studies 1 and 2, participants were imagining literal physical invisibility. My interest in reactions to felt invisibility by marginalized populations, of course, is only tangentially related to literal physical invisibility. Marginalized populations are likely well aware that they are not physically invisible, but nevertheless, notions of what one might do and feel if physically invisible might seep into how one feels and behaves when socially invisible (or obviously ostracized, in Williams's terms). Thus, although there is a clear difference to what I was having participants imagine in Studies 1 and 2 and the social interaction I was having them experience in Study 3, I believe there is a conceptual connection. What people imagine themselves capable of doing if physically invisible might nudge them towards these behaviors when socially invisible.

Additionally, whereas Studies 1 and 2 asked participants to imagine various scenarios, I was interested in examining actual behaviors in and self-reported responses from a real-time three-person interaction. In Study 3, I sought to provide a more structured and group-like environment to assess whether individuals feel badly but act on the advantages afforded by a temporary state of oblivious ostracism.

STUDY 3

Study 3 was designed to assess how participants would respond during a virtual experiment if placed in a temporary state of social invisibility. As explained in Studies 1 and 2, participants only reported self-serving behaviors when imagining being in a temporary state of invisibility. Study 3 looked at the comparison between role prescribed ostracism (being assigned a role that does not require acknowledgement) and oblivious ostracism (being unworthy of attention because of your status). The study used Zoom as a virtual platform to invite participants into a job discussion about candidates applying for a position at Purdue University. Each participant was made aware of their lower status in comparison to the other participants (confederates) in the study. Each participant, regardless of role, was ignored by the confederates during the job discussion. The difference was that role prescribed ostracized participants were able to use their role as a justification for why they were being ignored. Obviously ostracized participants had to create justification for being ignored in which the reason could be because of their lowered status. Need satisfaction, mood and likelihood to take advantage of being ignored by completing a survey prematurely were assessed as dependent variables in this study.

I first hypothesize that both conditions would have lowered need satisfaction and worse mood in comparison to averaged inclusion mean levels from previous ostracism literature because all participants are experiencing ostracism. I also hypothesize that oblivious ostracism would lead to lower need satisfaction, worse mood, and a greater likelihood to take advantage of the study by completing a survey prematurely. Obviously ostracized participants should have lower need satisfaction and mood, in comparison to role prescribed ostracized participants, because they were made to feel unimportant and unvalued in the discussion. Role prescribed participants, however, could use their role as a justification for being ostracized and this can act as a buffer for their need satisfaction and mood. I predicted that participants in the oblivious ostracism condition would also be more likely to complete the job discussion questionnaire prematurely because it would give them a personal advantage to not only cognitively dissociate from being ignored but also allow them to leave the study sooner and physically escape being ignored and unnoticed.

Methods

Participants

Psychology undergraduates ($N = 117$) were recruited from a Midwestern university subject pool. As this is one of the first studies to compare two different types of ostracism, as many participants as possible were collected during a 3-month period. After removing participants who did not complete the survey ($n = 1$) and those that did not consent to the usage of their data ($n = 1$), the final sample size was 115. The sample included 41.7% men, 57.4% women, and 0.9 % gender not specified. The racial demographics were Asian/Asian American (21.7%), Black/African/African American (2.6 %), Caucasian/White (69.6%), Hispanic/LatinX (4.3%) and other (1.7%). Their mean age was 19.16 years.

Design

This is a single factor two-level between-participants design, with participants randomly assigned to either a role-prescribed or oblivious ostracism condition. The dependent variables are (1) how long before they began the survey (hypothesized to be sooner in the oblivious condition), (2) their reported need satisfaction (hypothesized to be low for both types of ostracism when compared to typical inclusion effects reported in meta-analyses), and (3) mood (also hypothesized to be more negative for both types of ostracism when compared to typical inclusion effects reported in the meta-analyses).

In previous ostracism research, an inclusion group is added as a condition to assess the effects of ostracism. Because of the COVID-19 restrictions occurred during this study, the design focused solely on comparing role-prescribed to oblivious ostracism. This results in a fairly conservative test by pitting two types of ostracism against each other, rather than having an inclusion condition for which need satisfaction and mood would have likely been substantially higher. Although one cannot test between conditions of my experiment with responses to inclusion in other experiments, I offer this comparison descriptively to suggest that both forms of ostracism were generally undesirable. In a meta-analysis of reactions to inclusion in a virtual ball toss game (i.e., Cyberball), means (on a 5-point scale from low to high) were found to be 3.52¹ for need satisfaction and 3.33 for mood².

Procedure

The primary objective of this study was to demonstrate the double-edged sword of oblivious ostracism: feeling invisible should feel bad (more negative affect and lower need satisfaction than role-prescribed ostracism), but also afford participants the opportunity to get away with something that would be difficult to do if they felt visible. In this study, all participants are ignored and excluded, and all participants understand that their fellow group members, the confederates, are older (by age and class rank) than they are. Being younger in age should make all participant feel less knowledgeable in comparison to the confederates. However, role-prescribed ostracism gives participants the opportunity of using their role to help make sense of why they are being ignored. An oblivious ostracized participant does not have the same opportunity as role-prescribed participants. Therefore, they will narrow down attributes of being ignored to them being less knowledgeable and the feeling of invisibility will emerge. From there, participants should want to remove themselves from the uncomfortableness of being unnoticed, which can be done by taking advantage of their invisibility and beginning a survey before they are supposed to. So, this design was admittedly conservative as I hoped to find significant differences *between* two ostracism conditions.

As stated in the literature review, when individuals are ostracized, they try to fortify their need satisfaction by creating justification for why they are being excluded (Williams, 2009). In the role prescribed ostracism condition, participants were told to observe the discussion but not speak and are ignored and excluded in any intragroup interaction. However, role prescribed

participants can use their role as a justification for why they are being excluded by the rest of the group. This should create a sort of buffer, allowing there to be less need satisfaction and worse mood for role prescribed participants but not to the extent of that of obviously ostracized participants who are ignored (see Rudert & Greifeneder, 2019 who show that justified ostracism is less threatening). In the oblivious ostracism condition, participants are told to actively be a part of the discussion but are also ignored. Obviously ostracized participants lack a nonthreatening justification for their ostracism, leaving them with the threatening attribution that, because they are younger and of lower educational rank, they and their opinions do not matter to the other participants.

This study was conducted on the Zoom video conferencing application. In order to qualify for this study, participants had to have a camera and a microphone that could allow them to be

seen on video and heard by the other participants in the study. Participants used the SONA website to sign-up for a 45-minute timeslot and then received a Zoom link. In the beginning of the experiment, participants entered a Zoom waiting room and were allowed into the Zoom room at the time of their study.

There were six confederates used for this study. Two of the confederates were African American/Black and four were Caucasian. Two of the confederates were male and four of the confederates were female, and their mean age was 20 years old. Confederates were broken down into three pairs of two people. Two confederates interacted with the participant for each session. As each participant “entered” the Zoom room, two confederates also entered the Zoom room.

Introduction

Once in the Zoom room, all participants were welcomed by the researcher and were given these instructions.

First, participants were told they would be participating in a group job discussion for candidates applying for a social psychology position at Purdue University. Each person would be privately messaged their role for their group discussion by the researcher. Each study had a person assigned to three of four roles: the discussion timekeeper, discussion leader, discussion participant or the discussion observer. They were also told that these roles were randomly assigned to them by how they entered the waiting room. Along with these roles, if needed, participants were sent additional documents they were told should be downloaded and open in preparation for the breakout room.

Next, participants were told that one of them would be assigned the role of the “discussion timekeeper” and this person would be sent the study instructions as their additional document. The discussion timekeeper was instructed to begin reading the study instructions once all participants had entered the breakout room.

Lastly, participants were told to completely leave the Zoom platform once they had finished the survey and their credit would be granted once they exit the Zoom meeting. After these instructions, participants were asked if they had any questions and were then invited into a breakout room without the researcher’s presence.

Confederates

Unknown to the participants, the confederates were always assigned to play two roles during the study, the discussion timekeeper and the discussion leader. The discussion timekeeper oversaw reading the study instructions and kept time during the discussion. The discussion leader oversaw sharing the three resumes with the group and took notes during the discussion. Even though each confederate was aware of their roles before the study begun, the researcher still privately messaged them their roles and pretended to send them the additional documents to make their roles of being a participant more believable.

Breakout Room

Once in the breakout room, the confederates worked through a three-part script (see Appendix A) that begins with a Get Acquainted Task, moved to a description of each person's role along with an introduction of the survey and ended with an eight-minute discussion of job candidate resumes (see Appendix A) for a psychology position at Purdue University.

Get Acquainted Task

The confederate assigned to be the discussion timekeeper walked the group through a Get Acquainted Task (Nezlek et al., 1997) requiring each person to answer three questions. The questions were: What year are you at Purdue, what do you like about psychology and why did you sign up for this study? This task was purposed to create a status difference between the confederates and the participant. Many of the individuals who sign up for studies through the SONA pool are undergraduate, first-year and sophomore students. Therefore, each confederate was scripted to say they were an undergraduate senior to make them seem older and assumed to be more mature.

Role Description and Survey

After the task, the discussion leader asked all participants to state what role they were assigned to. Placing the role reveal after the task ensured that the confederates did not unconsciously treat the participants in a way that would compensate for their future of being ignored during the scripted discussion. The discussion timekeeper then described their role, and

they explained the discussion leader's role, walking them through sharing their screen and taking notes during the discussion. Next, the discussion timekeeper described the participant's role which was either to "actively participate and share your opinion" if assigned to be the discussion participant or to "actively observe and do not speak" if assigned to be the discussion observer. The discussion leader then placed a Qualtrics survey link in the chat and explained that this survey was meant to be completed after the discussion had ended. Introducing the survey before the discussion began allowed there to be equal opportunity for participants to complete the survey when they desired to. Having access to the survey and assessing if participants will take advantage of it and begin it early is one of the main dependent variables.

The Discussion

After the discussion timekeeper introduced the survey, the confederate assigned to be the discussion leader took over and directed the group towards the resumes by beginning a discussion of the first candidate. For the duration of the discussion, the confederates spent time going back and forth with opinions about the strengths and weaknesses of each of the three candidates. During this time the participants, regardless of role, were completely excluded and ignored. If they attempted to speak the confederates talked right over them. Once the full scripted 8-minute discussion had finished, the discussion timekeeper reminded the group to complete the survey and the confederates pretended to take the survey until the participant left the breakout room.

Dependent Variable Measures

Need Satisfaction

Participants were assessed on the satisfaction of their four fundamental needs using the Need Satisfaction Scale (Williams, 2009), answered with respect to how they felt during the discussion. Participants rated their agreement with statements on a 5-point continuous scale from "not at all" to "extremely." Each fundamental need had a set of questions that assessed it. Statements catering to the feeling of belonging included "I felt disconnected," "I felt rejected," and "I felt like an outsider." Statements catering to the assessment of self-esteem were, "I felt good about myself," "My self-esteem was high," and "I felt liked." Statements assessing meaningful existence were, "I felt invisible," "I felt meaningless," and "I felt nonexistent." Control was

assessed with, “I felt powerful,” “I felt I have control over the current situation,” and “I felt superior.” The items for each need were reverse scored and their average were taken so that lower scores indicate lower need satisfaction. (See Appendix B).

Mood

Participants reported how they felt emotionally during the discussion. The Moods Questionnaire (Williams, 2009) is often used in addition to the Need Satisfaction Scale mentioned above. Participants rated their agreement with 12 emotions on a 5-point Likert scale from “not at all” to “extremely.” Examples of emotions include “good, bad, angry, sad.” The negative emotions were reversed coded, and all 12 items were averaged so that high numbers reflect more positive emotions. (See Appendix B).

Exploitative Behavior

Exploitative behavior in the present study was defined as using resources in a manner that was immediately self-beneficial. In this case, it was completing the survey during the discussion, instead of once it had ended, as a way that participants could finish and leave early. During the discussion, the confederates were required to report three-time references. The initial time reference was the time the Qualtrics survey was introduced to the group. The second time reference was when the discussion script ended, and the third time reference was when the participant left the breakout room. These time references, along with the time stamp placed on each question in the survey, were used to assess when participants began the survey, when they ended the survey and how long it took them to complete the survey. Comparing time across the two conditions allowed there to be an assessment of whether participants in the oblivious ostracism condition were more likely to begin the survey during the discussion and complete the survey quicker than participants in the role prescribed ostracism condition. If supported, this measure would suggest that if invisible and unacknowledged because of status, individuals may be more likely to exploit their invisibility for their own benefit.

Manipulation Check

Participants were asked to report what role they were assigned and to explain what they were supposed to do based on their assigned role. (See Appendix B)

Attention Check

Towards the end of the survey, participants were asked to indicate why their group members gave them the amount of attention that they did. Participants were able to choose one of four answer choices (1) My fellow group members did not like me, (2) I was assigned a role that did not require participation, (3) I was not engaged in the conversation, and (4) My fellow group members are smarter than me. This question was used to gauge whether the condition manipulations were effective. If the attention check was effective, then participants in the oblivious ostracism condition will indicate that their group members were smarter than them, while participants in the role prescribed ostracism condition will indicate that they were assigned a role that did not required participation. (See Appendix B)

Survey Completion

Participants reported whether they were supposed to complete the survey at the beginning, during or at the end of the discussion and to explain when and why they chose to complete the survey. (See Appendix B)

Demographics and Debrief

Lastly, participants filled out demographic measurements of age, gender, race and nationality. Participants were then debriefed and indicated permission to use their data for analysis. (See Appendix B) participants filled out demographic measurements of age, gender, race and nationality. Participants were then debriefed and indicated permission to use their data for analysis. (See Appendix B)

Ancillary Measures

Candidate and Discussion Based Questions

After assessing need satisfaction and mood, participants answered various questions about the candidates including what they remembered about each candidate and who is most and least deserving of the position. Participants were then asked questions about their discussion quality. One question included rating the conversation quality of their group based on a 5-point scale with 1 star indicating lower conversation quality and 5 stars indicating high conversation quality. Afterwards, participants were asked how they felt about their group members on a 7-point scale from “strongly disagree” to “strongly agree.” Example questions include “My group worked together effectively during the discussion” and “My group did not communicate enough.” Items were reversed scored so that higher numbers indicate higher group assessment. (See Appendix B)

Personality Measure

Participants were assessed on their personality traits using a Ten Item Personality Inventory (TIPI) created by Gosling and colleagues in 2003. Participants rated their agreement with certain characteristics on a 7-point continuous scale from “disagree strongly” to “agree strongly.” Each Big Five personality trait had a set of characteristics that assessed it. Characteristics catering to extraversion include “extraverted, enthusiastic.” Characteristics catering to agreeableness include “sympathetic, warm.” Characteristics catering to conscientiousness include “dependable, self-disciplined.” Characteristics catering to emotional stability include “calm, emotionally stable.” Characteristics catering to openness to experiences include “open to new experiences, complex.” The items for each characteristic were reverse scored and their average were taken so that lower scores indicate less of that personality trait. (See Appendix B)

Results³

While on Zoom, most participants were well behaved and followed the directions read by the discussion timekeeper. There were a few times where participants would say they were assigned to a confederates’ role which prompted the researcher to privately confirm each person’s role before the discussion. During the beginning of the job discussion, most participants were

observably engaged and focused on the conversation between the confederates. Eventually, participants would do one of two things (1) continue to focus on the conversation or (2) begin to panic. Participants would show a panic nature by muting and unmuting themselves while saying ‘hello’ several times as they assumed a loss of audio is why they were being ignored. If muting and unmuting did not work, some participants privately messaged the confederates and became visibly upset with their group members for ignoring them. In the end, regardless of condition, each discussion would end with the participant observably sitting silently waiting for the discussion to finish.

Manipulation Check

Participants were asked to select the role they were randomly assigned to. A Chi Squared Test of Independence was performed to examine the relation between condition and the role selected by participants. The relation between these variables was significant $\chi^2 (1, 114) = 114, p < .001$. All participants in the oblivious ostracism condition selected that they were randomly assigned to the role the “participant” and all participants in the role prescribed condition selected that they were randomly assigned the role of the “observer.” These results indicate that my role selection manipulation check was successful.

Attention Check

Participants also completed an attention check. A Chi Squared Test of Independence also showed a significant relation between condition and why participants felt they received the amount of attention they did from their group, $\chi^2 (3, 114) = 42.54, p < .001$. While significant, the results indicated that participants may have questioned how to view their condition. See Table 4.

Table 4. Frequencies of Why Participants Received the Amount of Attention They did From Group Members for Two Types of Ostracism:
Role Prescribed and Oblivious

	My group members did not like me	I was assigned to a role that did not require participation	I was not engaged	My fellow group members are smarter than me
Role Prescribed	0	56	2	0
Oblivious Ostracism	5	23	7	21

Primary Results

Correlations

The APA Tables package in R was used to create correlations for each individual need, total need satisfaction, mood and total group assessment (See Table 5). Results showed that all variables are positively correlated except for control and total group assessment $r = 0.12$, ns.

Total Need Satisfaction and Mood

An independent samples t-test was used to analyze need satisfaction and mood. Participants in the oblivious ostracism condition ($M = 1.90$, $SD = 0.71$) compared to participants in the role prescribed condition ($M = 2.23$, $SD = 0.66$) reported significantly lower need satisfaction, $t(114) = -2.63$, $p = .01$, $d = 0.49$. Participants in the oblivious ostracism condition ($M = 3.00$, $SD = 0.83$) compared to participants in the role prescribed condition ($M = 3.84$, $SD = 0.66$) reported significantly worse mood, $t(114) = -6.01$, $p < .001$, $d = 1.12$. See Figures 1 and 2. Additionally, the mean level for need satisfaction for both conditions is visibly lower than the averaged inclusion mean levels of 3.52 mentioned above. However, only the mean level for the oblivious ostracism condition was worse than the averaged inclusion mean for mood of 3.33 reported above. However, these results cannot be tested against the inclusion mean so they should be viewed with caution.

Survey Start Time

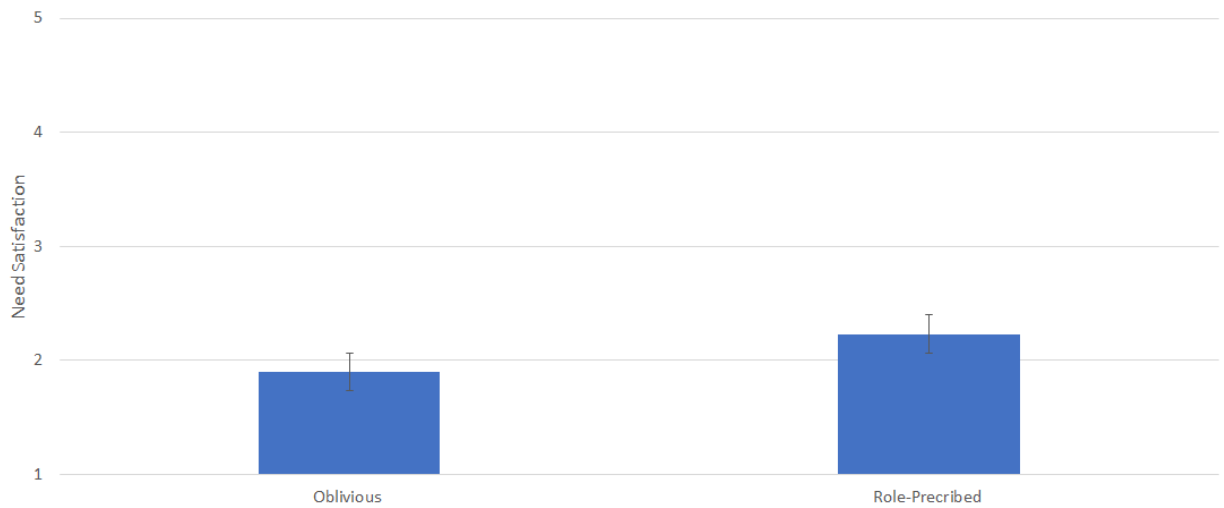
One coder created a column that indicated whether the survey start time for each participant (based on Qualtrics survey output) was before the time the discussion ended, as noted by the confederates. If the participant began the study before the end of the discussion, they were coded under “Yes.” If they began after the discussion had ended, they were coded for “No.” A McNemar’s Chi-Square Test was used to assess whether there was a difference between conditions and whether the survey was began prematurely (See Table 6). There was no difference in the proportion of participants who began prematurely based on condition, $\chi^2(1, 114) = 1.5$, $p = .20$.

Table 5. Means, Standard Deviations, and Correlations

Variable	<i>M</i>	<i>SD</i>	Belonging	Meaningful Existence	Self-Esteem	Control	Need Satisfaction	Mood
1. Belong	2.27	1.00						
2. Meaningful Existence	2.11	1.00	.71**					
3. Self-Esteem	2.34	0.82	.52**	.47**				
4. Control	1.57	0.71	.36**	.36**	.54**			
5. Need Satisfaction	2.07	0.70	.85**	.84**	.78**	.67**		
6. Mood	3.43	0.86	.52**	.40**	.59**	.22*	.56**	
7. Group Assessment	4.67	1.13	.38**	.31**	.34**	.12	.37**	.55**

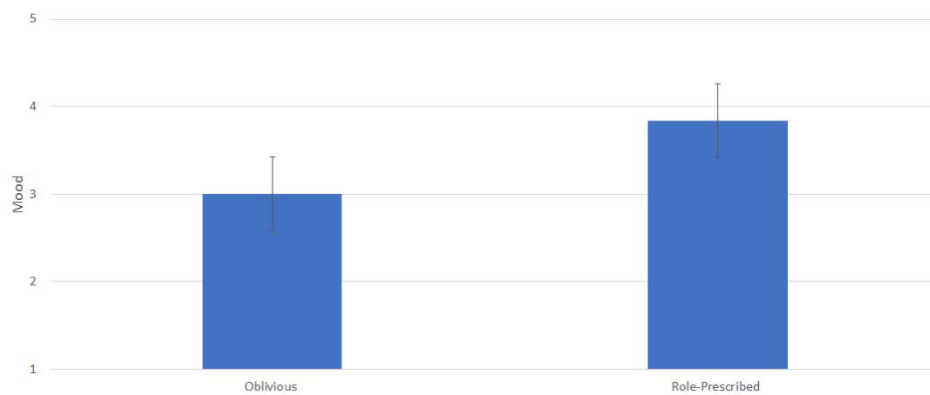
Note. *M* and *SD* are used to represent mean and standard deviation, respectively.

* indicates $p < .05$. ** indicates $p < .01$.



Note. Mean reported need satisfaction for participants in the oblivious or role prescribed ostracism condition. Higher numbers indicate greater satisfaction of needs. Error bars represent standard error.

Figure 1. Mean need satisfaction by condition.



Note. Mean reported mood for participants in the oblivious or role prescribed ostracism condition. Higher numbers indicate better mood. Error bars represent standard error.

Figure 2. Mean mood by condition.

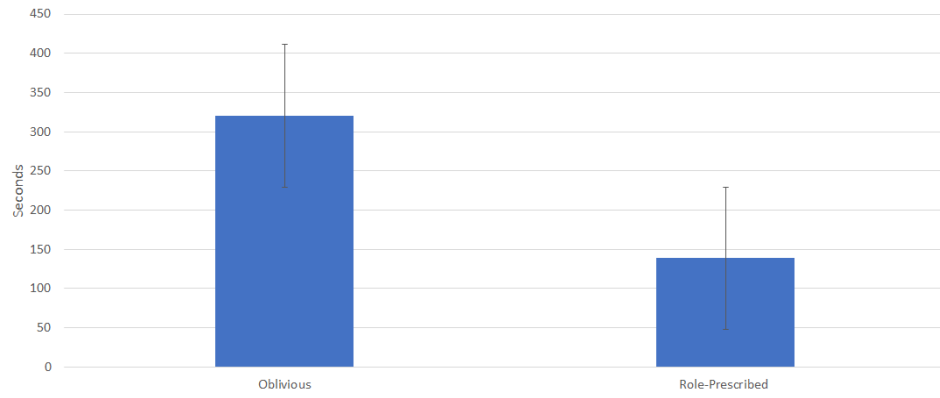
Table 6. Frequencies of Whether Participants Were Coded for Beginning the Survey Early for Two Types of Ostracism: Role Prescribed and Oblivious

	Yes	No	Total
Oblivious	26	30	56
Role Prescribed	20	38	58

An independent samples *t*-test showed that participants in the oblivious ostracism condition ($M = 320.30$, $SD = 44.99$) compared to participants in the role prescribed condition ($M=138.91$, $SD=39.06$) began the survey prematurely by seconds $t(114) = -6.01$, $p < .001$, $d = 0.57$. These results were calculated by comparing the time that participants began the survey (based on the Qualtrics timestamp), with the time the confederates reported each discussion ended. Results indicate that participants in the oblivious ostracism condition were more likely to begin the survey early. See Figure 3.

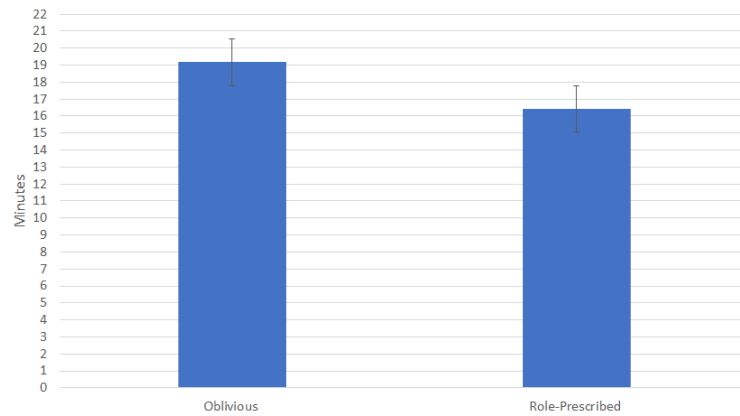
Survey Duration

An independent samples *t*-test was used to assess how long participants spent completing the survey. There was no significant difference in time spent on survey $t(114) = 1.88$, $p = 0.06$, $d = 0.35$, for the oblivious ostracism condition ($M = 19.18$, $SD = 8.45$) in comparison to the role prescribed condition ($M = 16.43$, $SD = 7.14$). These results indicate there was no support for the hypothesis that oblivious ostracized individuals would want to complete the survey quicker so they could leave the experiment faster. See Figure 4.



Note. Mean premature start time for participants in the oblivious or role-prescribed ostracism condition. Error bars represent standard error.

Figure 3. Mean survey start by condition.



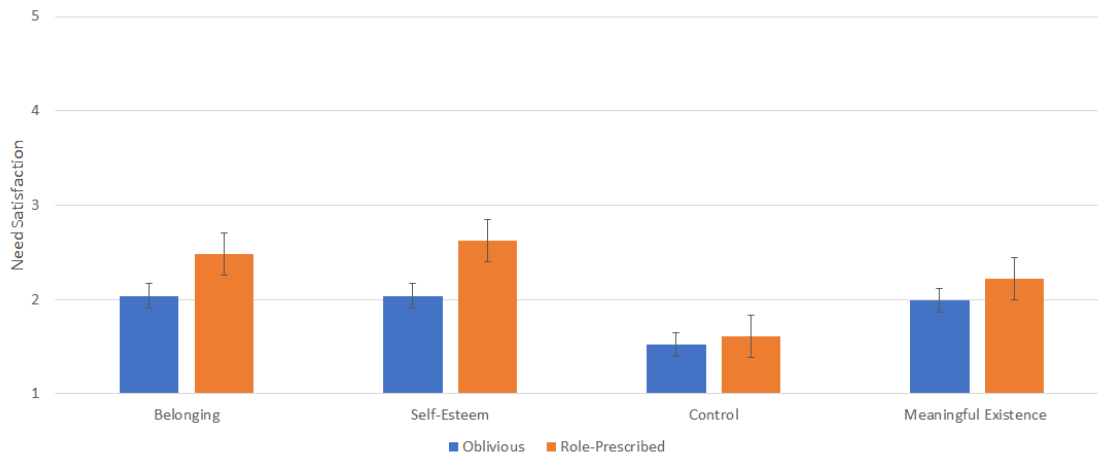
Note. Mean time spent on survey for participants in the oblivious or role-prescribed ostracism condition. Error bars represent standard error.

Figure 4. Mean survey duration by condition.

Exploratory Analysis Results

Need Satisfaction: Belonging, Self-Esteem, Control, and Meaningful Existence

An independent samples *t*-test was used to analyze the four fundamental needs separately. Participants in the oblivious ostracism condition ($M = 2.04$, $SD = 0.99$) compared to participants in the role prescribed condition ($M = 2.48$, $SD = 0.98$) report significantly lower belonging $t(114) = -2.40$, $p = .02$, $d = 0.45$. Participants in the oblivious ostracism condition ($M = 2.04$, $SD = 0.83$) compared to participants in the role prescribed condition ($M = 2.62$, $SD = 0.71$) report significantly lower self-esteem $t(114) = -4.05$, $p < .001$, $d = 0.75$. There was no significant difference in control $t(114) = -0.73$, $p = 0.47$, $d = 0.13$ for the oblivious ostracism condition ($M = 1.52$, $SD = 0.69$) in comparison to the role prescribed condition ($M = 1.61$, $SD = 0.74$). There was also no significant difference in meaningful existence $t(114) = -1.23$, $p = 0.22$, $d = 0.58$ for the oblivious ostracism condition ($M = 1.99$, $SD = 1.00$) compared to the role prescribed condition ($M = 2.22$, $SD = 1.01$). See Figure 5.



Note. Mean reported satisfaction of each individual need for participants in the oblivious or role-prescribed ostracism condition. Error bars represent standard error. Higher numbers indicate greater satisfactions of each need.

Figure 5. Mean individual need satisfaction by condition.

An independent samples *t*-test was used to analyze each item of the need satisfaction scale separately. Exploratory analysis focused on items that would assess whether participants in the oblivious ostracism condition felt more invisible in comparison to the role prescribed condition.

Two items were analyzed. The first item which stated, “I felt invisible” was not significant $t(114) = -1.10, p = .27; d = 0.21$, however the direction of the means shows that participants in the oblivious ostracism condition ($M = 3.98, SD = 1.37$) compared to participants in the role prescribed condition ($M = 3.72, SD = 1.14$) report greater agreement with that statement. The second item which stated “I felt non-existent” was significant $t(114) = -1.99, p = .05; d = 0.37$. Participants in the oblivious ostracism condition ($M = 4.26, SD = 1.03$) compared to participants in the role prescribed condition ($M = 3.86, SD = 1.13$) report significantly greater agreement with that statement. A description of the significance of these results can be found in the discussion section.

Deserving of Position

A Chi Squared Test of Independence revealed no significant association between condition and which candidate was most deserving of the position $\chi^2(2, 114) = 0.62, p = 0.73$. A Chi Squared also showed no significant association between condition and which candidate was least deserving of the position $\chi^2(2, 113) = 0.79, p = 0.68$. See Tables 7 and 8.

Group Assessment

An independent samples t-test was used to analyze how participant assessed their group interactions. Participants in the oblivious ostracism condition ($M = 3.99, SD = 0.94$) compared to participants in the role prescribed condition ($M = 5.34, SD = 0.88$) report significantly lower assessments of their group, $t(114) = -2.40, p < .001, d = 1.48$. Also, participants in the oblivious ostracism condition ($M = 2.52, SD = 0.99$) compared to participants in the role prescribed condition ($M = 4.03, SD = 0.88$) reported significantly lower ratings of their group $t(114) = -2.40, p < .001, d = 1.61$ on a 5-star scale. See Figures 6 and 7.

Survey Reported Start Time

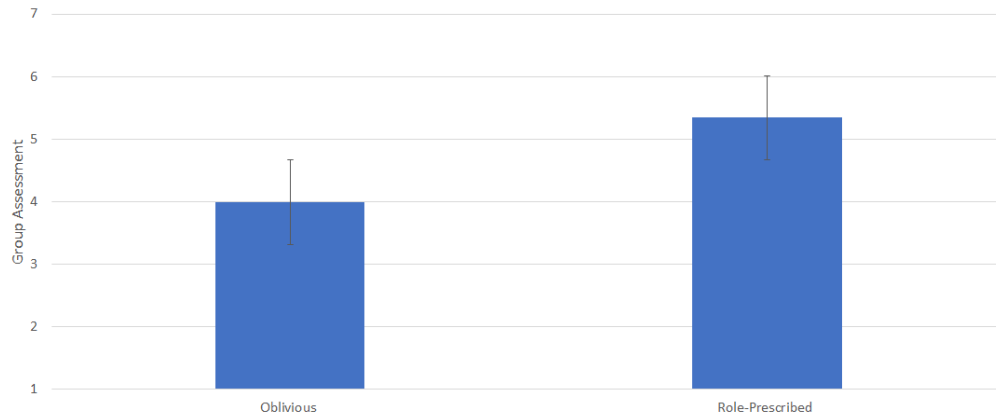
A Chi Squared Test of Independence showed no significant association between condition and when participants thought they should begin the survey $\chi^2(2, 114) = 1.17, p = 0.56$. A Chi Squared Test also showed no significant association between condition and when participants reported that they began the survey $\chi^2(2, 114) = 0.003, p = 1.00$. See Tables 9 and 10.

Table 7. Frequencies of Who was Most Deserving of the Position for Two Types of Ostracism:
Role Prescribed and Oblivious

	Ryan Lowe	Michael Moore	Amanda Jones	Total
Oblivious	6	41	9	56
Role Prescribed	9	41	8	58

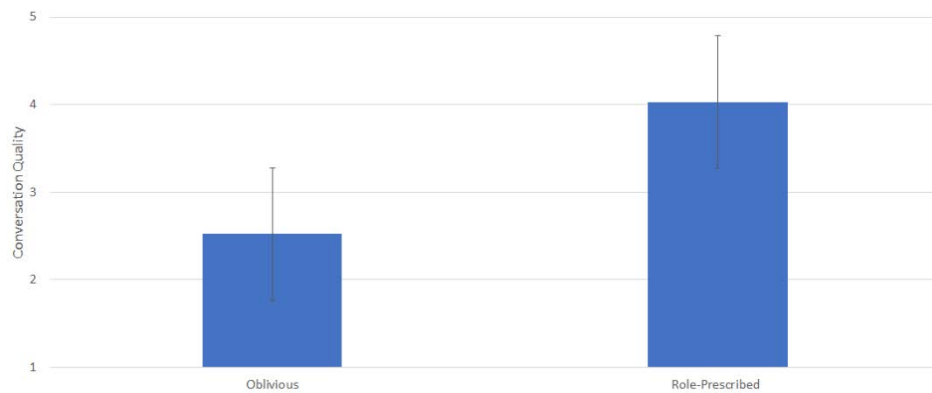
Table 8. Frequencies of Who was Least Deserving of the Position for Two Types of Ostracism:
Role Prescribed and Oblivious

	Ryan Lowe	Michael Moore	Amanda Jones	Total
Oblivious	18	4	33	55
Role Prescribed	23	5	30	58



Note. Mean reported group assessment for participants in the oblivious or role-prescribed ostracism condition. Higher numbers indicate greater assessment of the group. Error bars represent standard error.

Figure 6. Mean group assessment by condition.



Note. Mean reported quality of the group discussion for participants in the oblivious or role-prescribed ostracism condition. Error bars represent standard error.

Figure 7. Mean conversation quality by condition.

Table 9. Frequencies of Reported Start Time of When Participants Were Supposed to Begin the Survey for Two Types of Ostracism: Role Prescribed and Oblivious

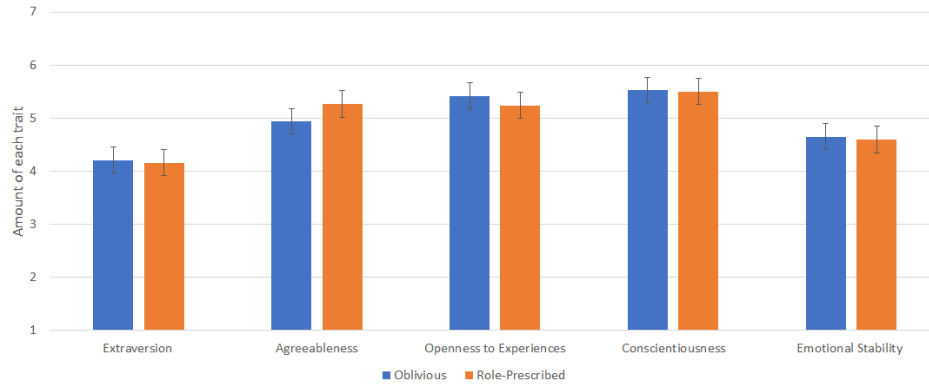
	At the beginning of the experiment	During the experiment	At the end of the experiment	Total
Oblivious	1	3	54	56
Role Prescribed	0	2	54	56

Table 10. Frequencies of Reported Start Time of When Participants Said They Began the Survey for Two Types of Ostracism: Role Prescribed and Oblivious

	At the beginning of the experiment	During the experiment	At the end of the experiment	Total
Oblivious	1	4	51	51
Role Prescribed	1	4	53	58

Personality Traits

An independent samples *t*-test was used to analyze the TIPI. There was no significant difference between conditions for any of the personality measures. See Figure 8.



Note. Mean reported personality assessment for participants in the oblivious or role-prescribed ostracism condition. Higher numbers indicate more of that personality trait. Error bars represent standard error.

Figure 8. Mean personality trait by condition.

Mediation Analysis

Based on the results mentioned above, participants in the oblivious ostracism condition were more likely to begin the survey prematurely, but not because they wanted to leave the study quicker (as shown by the non-significant survey duration results). Therefore, to investigate why obviously ostracized individuals are more likely to take advantage of being ignored, a mediation analysis was performed using PROCESS Macro by Andrew Hayes in SPSS. The relationship between condition and beginning the survey prematurely was not mediated by total need satisfaction or mood. As Figure 9 illustrates, the regression coefficient between condition and need satisfaction was significant but the regression coefficient between need satisfaction and likelihood to begin a survey prematurely was not significant. As Figure 10 illustrates, the regression coefficient between condition and mood was significant but the regression coefficient between mood and likelihood to begin a survey prematurely was not significant. The standard indirect effect for need satisfaction was -6.85 and the standard indirect effect for mood was 28.31 . I tested the significance of this indirect effect using bootstrapping procedures. Unstandardized indirect effects were computed for each of 5,000 bootstrapped samples, and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. The bootstrapped unstandardized indirect effect for need satisfaction was -0.02 , and the 95% confidence interval ranged from -48.19 , 27.43 . Thus, the indirect effect was not statistically significant. The bootstrapped unstandardized indirect effect for mood was 28.31 , and the 95% confidence interval ranged from -41.38 , 100.64 . Thus, the indirect effect was also not statistically significant.

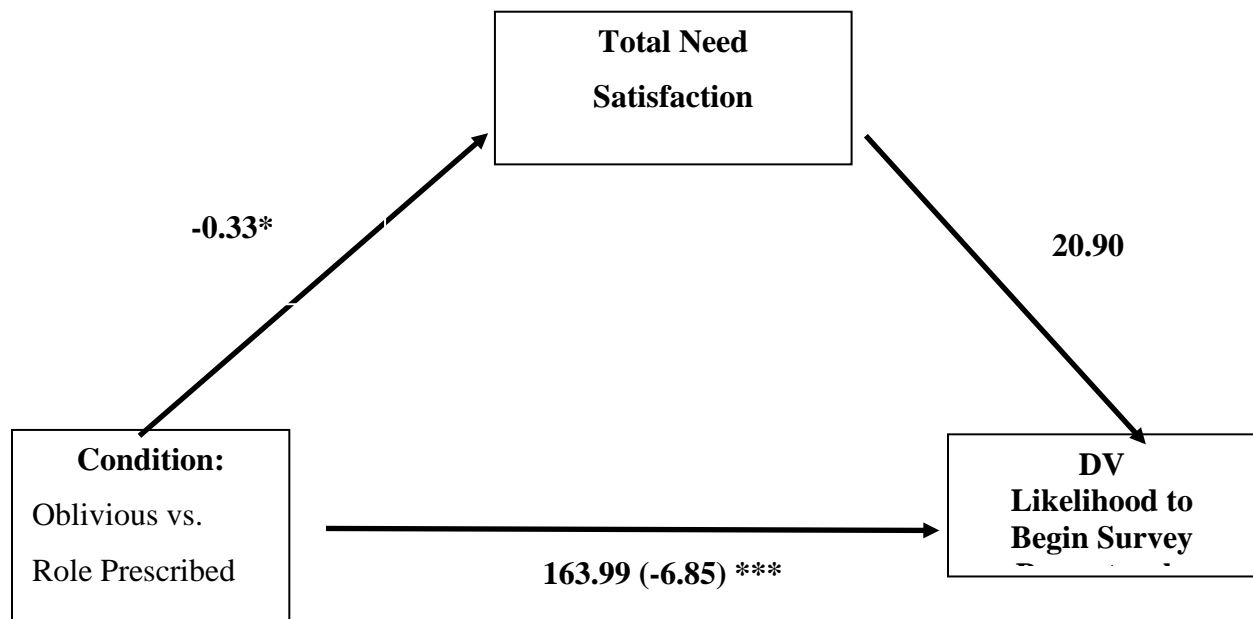


Figure 9. Standardized regression coefficient for the relationship between condition and the likelihood to begin a survey prematurely as mediated by need satisfaction. The standardized regression coefficient between condition and likelihood to begin a survey prematurely, controlling for need satisfaction, is in the parentheses.

* $p < .05$. *** $p < .01$.

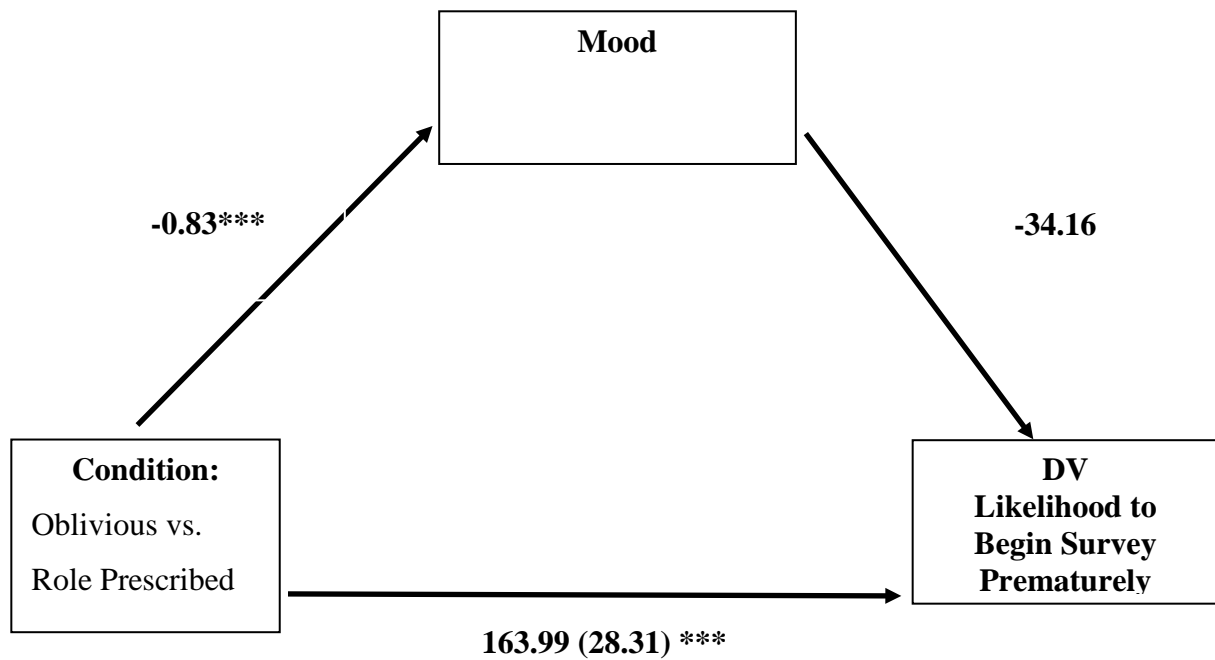


Figure 10. Standardized regression coefficient for the relationship between condition and the likelihood to begin a survey prematurely as mediated by mood. The standardized regression coefficient between condition and likelihood to begin a survey prematurely, controlling for mood, is in the parentheses.

* $p < .05$. *** $p < .01$.

Free Response Coding of Non-Dependent Variables

Remembered Details of Candidates

Three coders created a list of themes for the details that were remembered about each candidate. They also calculated the frequency of how often these themes were used. The three themes were (1) Things mentioned by the confederates during the discussion, (2) Things not mentioned by confederates but were mentioned on the candidate resume, and (3) Things that were mentioned for a different candidate or things that were made up by the participant. The coder agreement was 95%. A Chi Squared Test of Independence showed no significant association between condition and details remembered for Ryan Lowe $\chi^2(2, 115) = 0.005, p = 1.00$, Matthew Moore $\chi^2(2, 115) = 0.32, p = 0.85$, or Amanda Jones $\chi^2(2, 115) = 1.32, p = 0.52$. See Table 11.

Table 11. Frequencies of Details Remembered About Each Candidate for Two Types of Ostracism: Role Prescribed and Oblivious

	Oblivious	Role Prescribed
<u>Ryan Lowe</u>		
Said During the Discussion	35	36
Not Said During the Discussion	16	16
Other	6	6
<u>Michael Moore</u>		
Said During the Discussion	39	39
Not Said During the Discussion	15	17
Other	3	2
<u>Amanda Jones</u>		
Said During the Discussion	30	34
Not Said During the Discussion	24	24
Other	3	3

Difficulty of Role

Three coders created a list of themes (and frequency) for whether the participant described the role they were assigned to as being hard or not hard. A Chi Squared Test of Independence revealed a significant association between condition and the assigned role being viewed as hard $\chi^2(2, 115) = 32.80, p > .001$, indicating that a greater number of participants in the oblivious ostracism condition reported that they saw their role as being hard. See Table 12.

Table 12. Frequencies of Whether Participants Thought Their Role was Hard to do for Two Types of Ostracism: Role Prescribed and Oblivious

	Role-Prescribed	Oblivious Ostracism	Total
Yes, It Was Hard!	16	42	58
No, It Wasn't Hard	37	7	44
Both	5	8	13

Discussion

In As implied in Studies 1 and 2, invisibility can lend itself to allowing individuals to take advantage of not being acknowledged in a way that allows them access to information and into spaces that would have otherwise been restricted. An important next step was observing whether people, given the chance, would take advantage of their social invisibility when it is temporarily induced in a research experiment. The results from Study 3 suggest that virtual experiments can be used to assess the relationship between oblivious ostracism and self-serving behaviors. After randomly assigning participants to experience ostracism either because of their prescribed role (role prescribed ostracism) or because they were not as knowledgeable as their group members (oblivious ostracism), I found that all participants had lower need satisfaction, even though the latter group had significantly less need satisfaction and mood. I also found that participants in the oblivious ostracism condition were more likely to begin their survey prematurely. Participants even went as far as misreporting that they waited until the correct time to begin the survey, which was disconfirmed by their time stamps embedded within the survey. However, mediation analyses showed that neither need satisfaction nor mood mediated the relationship between condition and

beginning the survey prematurely. Overall, these results support the hypothesis that invisibility is experienced negatively, but also affords individuals the opportunity to break rules for their personal advantage.

One thing to point out about Study 3 is that obviously ostracized participants, in comparison to role prescribed participants, significantly indicated they felt non-existent but did not indicate that they felt invisible. Therefore, participants felt they were “not present” during the study, but they did not feel like they were unable to be seen. These results suggest that obvious ostracism may not be tapping into invisibility, in the way I have defined it, but it could be tapping into the feeling of being unnoticed without feeling unworthy of attention. If this is the case, then social invisibility may be connected to unstudied cognitive processes that are distinct from what has been mentioned in this research.

GENERAL DISCUSSION

There were two aims of Study 1. The first was to determine if invisibility was something individuals desired. This was assessed by asking participants to list their top 5 desired superpowers. The next aim was to assess participants' behavioral response to being temporarily or permanently invisible. This was with two questions: (1) what participants would do if they were invisible (as a superpower) and could turn it on and off at will, and (2) what participants would do if they were invisible (as a superpower) and could never become visible again. Results showed that a high percentage of participants listed invisibility as a desired superpower. Also, participants listed more self-serving behaviors (e.g., robbing a bank, pranking others) when responding to temporary invisibility but listed some self-threatening behaviors (e.g., isolating oneself) when responding to permanent invisibility.

Study 2 was designed to replicate the results from Study 1 but with slight modifications to the questions asked to participants. Asking about superpowers (in Study 1) could have primed participants to think about invisibility in a more positive and physical way. Therefore, in Study 2, any mentioning of superpowers was deleted from the questionnaire. Instead, participants were asked what they could see themselves doing if invisible temporarily and permanently. In addition, participants were also asked how they would feel if invisible and you can turn it on and off or invisible and never visible again. The results of what participants would do replicated the findings of Study 1 and participants reported more positive feelings when responding to temporary invisibility and more negative feelings when responding to permanent invisibility.

In Study 3, I sought to address invisibility as a double-edged sword which can cause threats to individuals' self-worth but can also create opportunity to utilize being ignored in an advantageous way. To understand this phenomenon, two types of ostracism (role prescribed and oblivious) were compared to evaluate how each type of ostracism effects need satisfaction and mood and whether there is a difference in behavioral response from the targets of both kinds of ostracism. Role prescribed ostracism is when an individual occupies a role that does not require others to notice or acknowledge them (e.g., a waitperson). Oblivious ostracism is when an individual is seen as being unworthy of attention (i.e., they are invisible). For this study, unworthiness is being manipulated by participants viewing themselves as having lower class status in comparison to their group members. When defining invisibility, I viewed it as a double-edge

sword- it produces a threat to the self (confirmed by psychological science literature), but it can also be used as a strategic advantage (shown in literature and films). Self-reported measures from Studies 1 and 2 indicated that invisibility is desired, especially if temporary and can be turned on and off at will. In these earlier studies, individuals also reported exploiting the opportunity to do something they could not get away with otherwise. In Study 3, oblivious ostracism caused worse moods and less need satisfaction than role-prescribed ostracism. But despite feeling worse, they exploited the situation and started the survey sooner than they were supposed to. Overall, this research suggests that invisibility is a double-edge sword and both psychological science and literature/movies' perspectives were accurate.

Limitations

There were some limitations within this research. First, Studies 1 and 2 looked at what participants would do and how they would feel if they could and could not control their invisibility. Study 3, on the other hand, assessed the effects of social invisibility on a person's feelings and actions. Therefore, it is currently unknown whether Study 3 is tapping into similar self-serving behaviors, which was hypothesized based in the results of Studies 1 and 2, or if there is an unexplored process leading obviously ostracized participants to exploit their invisibility. Secondly, studies involving ostracism tend to find big effect sizes, therefore, it was conservative to look at two ostracism conditions in Study 3. Normally, there would be an inclusion condition that would be used as the comparison group, but with the time restraints of this study, focus went towards whether different types of ostracism lead to differing behaviors effects and an inclusion condition was not included. Next, with this being a virtual experiment, some participants accessed the Zoom room from their phones instead of a computer. This created restrictions on whether participants could, or could not, complete the questionnaire if desiring the opportunity to. Also, beginning a survey early is a relatively trivial exploitative behavior. Behaviors, such as cheating on a test, may have been more compelling to research. Lastly, the study was conducted on Zoom, and I am not sure how social invisibility would be impacted if the study were instead conducted face to face.

Additionally, this current research included participants who were predominately White undergraduate students, but most of the social science literature on invisibility focuses on marginalized communities, especially African American/African/ Black individuals and the

negative effects of being constantly invisible. I imagine that individuals from marginalized communities would have one of two responses to being temporarily invisible. Individuals from marginalized communities may show signs of chronic invisibility where even the thought of being temporarily invisible may not excite them, as it did participants in Studies 1 and 2, because their reality of being invisible daily in society may overcome the ability to imagine ever being partially visible. Also, they could create untraditional ways of coping with the invisibility. For instance, instead of panicking or completing a survey prematurely, African American/African/Black individuals may be calmer and spend more time on the survey to present themselves visibly by their intelligence or cognitive functioning instead of being motivated to be seen or leave the study early.

Significance

As This is one of the first lines of research that compared the effects of two types of ostracism. Understanding how the motivation of ostracism from the source is perceived by the target is very important. Therefore, this research provides significant contributions to how having, or not having, justification for ostracism can produce dissimilar effects on a target. Additionally, this is the first line of research to discuss different types of invisibility and how each of them may lead to personal advantages for individuals.

Future Direction

If able to conduct this study again without the influence the COVID-19 restrictions and with a greater sample size, I would first conduct a study asking Black and White participants to report their actions and feelings for temporary vs permanent social invisibility. I would then create a single factor three level between-participants design. Participants would be assigned to either a role-prescribed, oblivious ostracism or inclusion condition in a face-to-face experiment. The procedure would be like Study 3 as participants would be issued roles for a group task and given the access to exploit something during the experiment. Recreating the studies in this way would provide more insight into imagined and in-person behavioral responses to social invisibility and assist in confirming whether social invisibility itself is a double edge sword.

In the future, I would also like to add a punitive ostracism condition to future research. As stated in the ostracism literature, a part of coping with an ostracism experience is by finding the reason you were ostracized and changing your behavior to be re-included. I predict that participants who are ostracized for a particular reason will be more likely to follow all instructions in order to be accepted by the group and to draw less attention to themselves, whereas oblivious ostracized participants will not be concerned with being re-included in the group during the time they are using invisibility to their advantage. I would also like to study the members of marginalized communities who feel permanently invisible in society daily. Based on Studies 1 and 2, permanent invisibility leads to worse mood and the emerging of self-threatening behaviors. If this is the case, it is very important to understand the experience of those who live in a constant state of invisibility so that we, as a society, can create a structure of re-inclusion and acknowledgement for these individuals.

I would also be interested in developing a social invisibility scale that would have items that could be restructured based on if the target population is marginalized or within the majority. Assessing individuals' attitudes towards being socially invisible can give insight into how it may affect marginalized populations in a more devastating/negative way than how it affects the majority. This would provide some evidence that majority populations might trivialize the claim and the experience of invisibility.

Conclusion

Social invisibility is when individuals are made to feel they are unworthy of attention by others. The idea of controllable invisibility may be appealing and have advantages but being less socially visible creates negative effects to the self while also produce self-advantaging behavior responses. More research is needed to confirm the effects of social invisibility in comparison to other types of invisibility.

FOOTNOTES

¹ The mean level of inclusion for need satisfaction was created from averaging the mean levels of included participants on the Need Satisfaction Scale (5-points) within the following research articles: 3.61 (Dvir et al., 2019), 3.29 (Wirth & Williams, 2010) and 3.67 (Goodwin, Williams & Carter-Sowell, 2010) with higher numbers indicating greater need satisfaction.

² The mean level of inclusion for mood was created from averaging the mean levels of included participants on the Need Satisfaction Scale (5-points) within the following research articles: 3.25 (Dvir et al., 2019) and 3.41 (Van Beest et al., 2012) with lower numbers indicating worse mood.

³ There was missing data for some of the dependent variables and the sample size number will fluctuate throughout the analysis based on the number of participants who completed each set of questions.

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APPENDIX A

Confederate Script

Adam: I have opened the study instructions. The first line says..

Welcome: Welcome, everyone! Thank you for your willingness to participate in this virtual experiment. Please make sure that your video is turned on and your mic is unmuted for the duration of the experiment.

First: Get acquainted by having everyone answer these three questions!

1. What is your school year at Purdue?
2. What do you like about psychology?
3. Why did you sign up for this study?

Adam: Ok, so I'll go first and then [insert participant name] can go next and Kim can go last!

****Do the Get Acquainted Task****

Adam: Hello, I am a senior here at Purdue. I really like how psychology teaches us how people's environment can shape who they become, ya know the whole nature vs. nurture thing. I signed up for this study because I am an honor's thesis student in Industrial Organizational Psychology, and I need the class credit.

Participant: ** Speaks**

Adam and Kim Reacts Positively to Participant's Response

Kim: Hey everyone! I am a senior here at Purdue University. In psychology, I have really enjoyed learning about different personality traits. I am also an honor's thesis student and this experiment sounded cool like the ones I read about in Psy Chi.

Adam: Alright, that's done! The next thing says..

Second: Your task this session is to help us research group biases that occur when selecting people for a job. Today you will be discussing job candidates for a position in the psychology department here at Purdue! Please only focus on the education and experience portion of the resumes due to the short discussion time available.

Third: Here are descriptions of your roles! You should stay in your role during the entire discussion

Roles

Adam: Before I read everyone's role description, what role do you each of you have?

Discussion Timekeeper- Read the instructions and set 10-minute timer for discussion for the full discussion. Tell your group members when the time has finished.

Adam: Hold on, let me bring up a 10-minute timer on my computer.

**** Take a few seconds to bring up a timer****

Discussion leader- Share and control the PowerPoint sent to you by the researcher right now. Instructions to Share PowerPoint:

1. Open the PowerPoint
2. Go to the bottom of your Zoom screen and click the green "Share screen" button.
3. Click the screen that shows the PowerPoint
4. Confirm with the group that everyone can see it!
5. Take 30 seconds to view the three resumes

Adam: Can you share it now?

****Once the PowerPoint is shared, take 30 seconds to scroll through the resumes****

Discussion Leader: Open a word document and take short notes that can be shared with your group members at the end of the discussion.

**** Only say the role the participant was assigned to****

Discussion Observer- Actively listen to the discussion but do not speak.

Discussion Participant- Actively participate and contribute to the full discussion.

Survey

Adam: There is a survey at the bottom of the instructions. I will place it in the chat!

Timekeeper, please place this survey link in chat:
https://purdue.ca1.qualtrics.com/jfe/form/SV_bqmbFG7ucArkN2B

Adam: After the discussion, we can complete the survey and then we are free to go. Everyone regardless of your role should complete the survey.

Adam: That's all the instructions!

Scene 2-Candidate One

Kim: Alright, let's get things started. We have some candidates to discuss!

Kim: The first candidate for the Social Psychology Professor here at Purdue is Ryan Lowe. Ryan is a graduate of University of Wisconsin-Madison with a PhD in social and personality psychology. Ryan's advisor was Janet Hyde and her primary research focus was on the psychology of women and gender differences regarding aggression. The basis of Hillary's thesis work was on violence and aggression in adolescent females.

Adam: That is pretty interesting. From what I can remember, we don't have a lot on that area of research at Purdue, Ryan could add some diversity to the department! What do you think?

Kim: I agree, but I also wonder how she would adjust to working at such research-focused university with only 1 year of experience of teaching under their belt. She would be a great addition to the department, but I think she needs more teaching experience.

Adam: Yeah! We should create a system for our discussion to make the most out of the time we have. Right now, there are 8 and a half minutes left. What if we go through the weakest points in each person's resume and write them down? Then we can compare all three candidates when we're done. We can do this for strong points for each candidate

Kim: That sounds good!

Scene 3- Change in Discussion

Kim: Let's begin with the weakest points on the first resume, what do you see as weaknesses for Ryan?

Adam: I see teaching experience as a potential weakness for her. It says there that she has a limited experience with social psychology classes outside of the introductory course and I wonder if that would be hard for her working in the department.

Kim: Yeah, that's a good point, I do agree that teaching experience and lack of social psychology experience are major weaknesses for Ryan. It may be better for her to gain more experience in teaching different areas of psychology before applying for any departmental jobs. What else do you see?

Adam: As I stated earlier, the uniqueness of this candidate is a definite pro for me. I mean just look at her resume! She has visited Germany and worked with a variety of teen and adolescents based organizations to get more information on her research topic. I think she would know a lot about aggression related topics.

Kim: I like that Ryan has worked in Germany and in Spain. Her cultural competency would help her interact with some students better. Give me a second to finish typing and we can move to candidate two.

Kim: Alright, let's move on to candidate two. Matthew Moore is a graduate of Ohio State University with a PhD in social psychology. Matthew worked with Duane Wegner and his thesis work focused on interpersonal relationships and attitude change amongst elementary aged students. How do we feel about this candidate?

Adam: Interesting, I wonder how Matthew decided to study interpersonal relationships of elementary students. That sounds like an uncommon area of research.

Kim: Yes, let's add that to the list of strong points for the Matthew, but what is weak about his resume?

Adam: Well, it looks like Matthew had a Postdoc at Harvard University with Jim Sidanius in their social psychology department but the time that he spent there seems to have been very short for that program. Based on my knowledge, people are usually in a postdoc position for at least 1-2 year. Matthew was there for 6 months!

Kim: What do you think could be the reason Matthew's postdoc was cut short Adam?

Adam: Ummm.... There could be many reasons but there are three that I can think of. Maybe he couldn't handle the workload at Harvard. He also could have been working on a special project that didn't last for the entire school year. You also have things like family emergencies or other circumstances that could have caused his time at Harvard to be cut short.

Kim: Yeah, that sounds reasonable. Another weakness I see with Matthew's resume, actually all of the resumes is that they did not publish any papers, I really don't know how important that is but a few of my psych professors have mentioned that they had to publish papers before they could become a professor. Although this is not a deal breaker, his resume would be stronger if he had taken the opportunity to complete it.

Adam: I'm not sure that not having publications early on in your graduate career is a deal breaker, but I can see why you would view it as a weak point. Are we done with weaknesses?

Kim: Yes, let's move onto the strong points in Matthew's resume. I like that he taught at a university in the Netherlands while he studied abroad in 2014. I have heard that some current professors in the department have worked with other universities in the Netherlands on various research projects. How cool is it that Matthew can be a bridge between the department and the Netherlands in future projects.

Adam: Wow, I did not even think of that! He could really do some meaningful research in the department. Along with the fact that he taught at Cornell University for a while. I could see him being a great professor.

Scene 4- Candidate Three

Kim: Our third candidate is Amanda Jones. Amanda is a graduate of Cornell University with a PhD in social psychology. It would be funny if she knows Matthew! It looks like Amanda's advisor was Melissa Ferguson and her thesis work focused on the social influence of benefactors on universities.

Adam: Another candidate with diverse research, it's always interesting to see the different topics that people study. Kim, it must have taken a lot of time to get connected with the benefactors for the study.

Kim: I get what you mean. I think it's cool how Amanda was awarded a presidential grant for her work within the political system in the 2008 elections. Let me quickly write that down.

Kim: Ok! What are weak points we see on Amanda's resume?

Adam: Ummm... many of her skills are geared towards jobs in industry. She does not have much focus on research and teaching. This seems like a weakness to me, seeing that she is applying for a position as a professor. What are your thoughts on this Kim?


Kim: That may or may not be a weakness. I like professors that have worked in industry. They are more able to connect with, the research world, in addition to everyday individuals. I will still write it down as a weakness. Along with this, Amanda listed less social psychology experience and that makes her resume less competitive in comparison to Ryan and Matthew.

Adam: Yeah, I can also see that as a weakness. Speaking of comparison.... Can you share the word document that you created so that I can see the comparison between each candidate?

*****Previously created word document will be shared by Kim in the Zoom meeting*****

Adam: Thank you! I guess we can go ahead and complete the survey now!

Resumes



Ryan Lowe
Social Psychology Post-Doc

Proficiency Skills

SPSS ●●●●●
R Studio ●●●●●
Bayesian ●●●●●
Qualtrics ●●●●●

Professional Skills

Brightspace ●●●●●
MA Programming ●●●●●
MS Office ●●●●●

Personal Skills

Team Work ●●●●●
Creativity ●●●●●
Networking ●●●●●
Leadership ●●●●●

Education

- 2019 **PhD**
University of Wisconsin Madison
Advisor: Janet Hyde
Research focused on violence and aggression in adolescent females.
- 2016 **Master Degree**
University of Wisconsin Madison
Advisor: Janet Hyde
Research focused on the development and maintaining of adolescent self-worth
- 2013 **Bachelor Degree**
Adams State University
Graduated with honors
Was the president of Psi Chi and received a leadership award at the graduation ceremony

Experience

- 2017 **Internship**
Association of Social Work
Germany and Spain
Worked with teen and adolescent based organizations to help provide the with better living experiences
- 2018 **Teaching**
Introduction to Social Psychology
Undergraduate studies at Wisconsin Madison
Lectured in social psychology for the 2018-2019 academic year

Contact

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Matthew Moore
Social Psychology Post-Doc

Proficiency Skills

SPSS ●●●●●
R Studio ●●●●●
Bayesian ●●●●●
Qualtrics ●●●●●

Professional Skills

Brightspace ●●●●●
Cultural Com. ●●●●●
MS Office ●●●●●

Personal Skills

Team Work ●●●●●
Creativity ●●●●●
Networking ●●●●●
Leadership ●●●●●

Education

- 2018 **PhD**
Ohio State University
Advisor: Duane Wegner
Research focused on interpersonal relationships and attitude change amongst elementary aged students.
- 2015 **Master Degree**
Ohio State University
Advisor: Duane Wegner
Research focused on attitude formation towards African American/Black men and women

Experience

- 2019 **Post Doc**
Harvard University
Advisor: Jim Sidanius
Research focused on institutional discrimination and intergroup conflict between adopted siblings from August 2019 to February 2020
- 2018 **Teaching**
Cornell University
Lecturer
Lectured for introduction to social psychology and attitudes courses for the 2018-2019 academic year
- 2014 **Study Aboard**
Tilburg University
Netherlands
Took classes in social psychology and also guest lectured for stereotype and prejudices courses

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Amanda Jones

Social Psychology PhD

Proficiency Skills

SPSS

R Studio

Bayesian

Qualtrics

Professional Skills

Com. Programming

Brightspace

MS Office

Personal Skills

Team Work

Creativity

Networking

Leadership

Education

2019

PhD

Cornell University
 Advisor: Melissa Ferguson
 Research focused the social influence of benefactors on universities

2016

Master Degree

Cornell University
 Advisor: Melissa Ferguson
 Research focused on the formation of personality traits in college students

2013

Bachelor Degree

University of Notre Dam
 Summa Cum Laude
 Graduated with a double major in psychology and business administration

Experience

2019

Internship

Google Corp. in New York
 User Experience Researcher
 Worked with Google corporations to create user friendly and interactive search experiences for the nation

2008

Internship

2004 Political Elections
 Barak Obama Campaign
 Was awarded a young minds presidential grants for research assistance

Contact

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APPENDIX B

Invisibility Study 3 Qualtrics

For each question, please select the number that best represents your feelings during the job candidate discussion.

While discussing...

	1 - Not at all	2	3	4	5 - Extremely
I felt "disconnected"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt rejected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt like an outsider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt good about myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My self-esteem was high	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt liked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt powerful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt I have control over the current social situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt superior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt invisible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt meaningless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt non-existent (<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each question, please click the number that best represents your **feelings during the job candidate discussion.**

	1 - Not at all	2	3	4	5 - Extremely
Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unfriendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide all of the details that you remember about Ryan Lowe or Candidate #1

Please provide **all** of the details that you remember about Matthew Moore or Candidate #2

Please provide **all** of the details that you remember about Amanda Jones or Candidate #3

Which Candidate is **Most Deserving** of the Job Position?

- ☐ Ryan Lowe
- ☐ Matthew Moore
- ☐ Amanda Jones

Why is this candidate **most deserving** of the job position?

Which Candidate is **Least Deserving** of the Job Position?

- ☐ Ryan Lowe
- ☐ Matthew Moore
- ☐ Amanda Jones

Why is this candidate **least deserving** of the job position?

On a 5 star scale, how would you rate the quality of the job candidate discussion? With 1 star indicating low conversation quality and 5 stars indicating high conversation quality.

Conversation
Quality

Please answer each question honestly and to the best of your ability.

	1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
My group was engaged or "into" the discussion	o	o	o	o	o	o	o
My group worked together effectively during the discussion.	o	o	o	o	o	o	o
My group effectively cooperated during the discussion.	o	o	o	o	o	o	o
My group did not communicate enough.	o	o	o	o	o	o	o
I liked my fellow group members.	o	o	o	o	o	o	o
If given another task, I would like to work with my fellow group members again.	o	o	o	o	o	o	o
I found it difficult to contribute to the discussion.	o	o	o	o	o	o	o

My group did not have enough time during the discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt distracted during the job discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My fellow group members gave me the amount of attention they did because...?

- ☐ My fellow group members did not like me
- ☐ I was assigned a role that did not require participation
- ☐ I was not engaged in the discussion
- ☐ My fellow group members are smarter than me

What was your role during the job candidate discussion?

- ☐ Leader
- ☐ Observer
- ☐ Participant
- ☐ Time Keeper

Can you explain what you were supposed to do during the job candidate discussion based on the role you were given?

Was It Hard To Do Role You Were Assigned To? Why or Why Not?

When were you supposed to begin the Qualtrics Survey?

- ☐ At the beginning of the experiment
- ☐ During the experiment
- ☐ At the end of the experiment

When did you begin the Qualtrics Survey?

- ☐ At the beginning of the experiment
- ☐ During the experiment
- ☐ At the end of the experiment

Please answer the sentence below with as much details as possible

I decided to begin the Qualtrics Survey when I did because.....

Here are a number of personality traits that may or may not apply to you. Please indicate the extent to which you agree or disagree with each statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

	1 - Disagree strongly	2 - Disagree moderately	3 - Disagree a little	4 - Neither agree nor disagree	5 - Agree a little	6 - Agree moderately	7 - Agree strongl y
Extroverted, enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical, quarrelsome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependable, self-disciplined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious, easily upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to new experiences, complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserved, quiet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathetic, warm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disorganized, careless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm, emotionally stable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional, uncreative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Background Information

What is your current age?

What is your gender/sex?

- ☐ Female
- ☐ Male
- ☐ Not listed

If you selected "Not listed", please specify your gender/sex.

What is your political orientation?

- ☐ Extremely Liberal
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ Extremely Conservative

What is your year in college?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Other

What is your race/ethnicity?

- ☐ African American
- ☐ Asian / Asian American
- ☐ Caucasian / White
- ☐ Hispanic
- ☐ Other _____
- ☐

Were you born in the USA?

- ☐ Yes
- ☐ No; If choosing this answer please specify your country of origin below:

How many years have you lived in the USA?

--> If less than a year - put '0'

What is your fluency in English?

- ☐ Very Fluent
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ Not Fluent at All