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THE ROLE OF SOCIAL ANXIETY IN PROSOCIAL BEHAVIOR FOLLOWING
EXCLUSION

A Thesis

presented in partial fulfillment of requirements

for the degree of Master of Arts

in the Department of Psychology

The University of Mississippi

by

HANNAH FRIEDMAN

May 2021

ABSTRACT

Social anxiety (SA) causes significant distress and impairment in several areas of daily life. Individuals with SA experience increased rates of exclusion and have more difficulty forming meaningful interpersonal relationships. Exclusion is associated with increased SA and motivations for social withdrawal in emerging adulthood. In non-SA individuals, the desire for compensatory social interaction following exclusion often produces prosocial behaviors (e.g., increased effort to help the group). Prosocial behavior levels following exclusion are not uniform, however, as an individual's response may vary depending on the type of exclusion experienced. Although previous work has observed decreased levels of prosocial behavior in non-SA individuals after explicit exclusions as compared to prosocial behavior following ignoring, no research has examined prosocial behaviors following different forms of exclusion among individuals with SA. The current study examined whether elevated SA interacted with experimental condition in the association between different types of exclusion and an individual's rate of prosocial behaviors. Results indicated that there was not a main effect of SA on prosocial behavior levels, regardless of condition. Additionally, there was not a significant interaction between SA and condition type on prosocial behavior levels. These results suggest that SA levels do not significantly moderate the relationship between different types of social exclusion and prosocial behavior levels. Findings are discussed in terms of next steps needed to improve our understanding of the relation between SA, social exclusion, and prosocial behavior.

Keywords: social anxiety, exclusion, prosocial behavior

DEDICATION

This work is dedicated to S.F.F.

ACKNOWLEDGMENTS

I would like to thank my advisor, Dr. Sarah Bilsky, for her continuous support and guidance on this project.

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CHAPTER I

INTRODUCTION

Social anxiety (SA) is relatively common among emerging adults (Stein et al., 2001). One of the hallmark features of SA is a persistent fear of perceived or actual scrutiny from others (American Psychiatric Association, 2013). This fear of interpersonal scrutiny is often associated with increased avoidance of social and performance situations among individuals elevated in SA (Maner & Schmidt, 2006). Individuals with SA report a lower quality of life (Barrera & Norton, 2009) and more difficulty forming meaningful relationships than individuals without the condition (Heerey & Kring, 2007). Further, during social interactions, individuals with SA may display inhibited social behaviors, difficulty participating in group conversations, and exhibit lower engagement levels with interaction partners, all of which may contribute to impaired interpersonal relationships in a variety of settings (Pilling et al., 2013). Critically, college is characterized by academic and social situations with the propensity for negative evaluation (e.g., exams; new peers), a context that may be especially difficult for those struggling with SA. It is, therefore, important to consider factors that may affect adaptive functioning among individuals with SA during this developmental period.

Social Anxiety and Interpersonal Relationships

SA symptoms typically emerge during adolescence and have a chronic course (Beesdo, Knappe, & Pine, 2009). For individuals with SA, deficits in interpersonal functioning appear early. For example, adolescents with SA report having fewer friends, experiencing increased bullying and exclusion rates, and strained peer and romantic relationships (Hebert, Fales, Nangle,

Papadakis, & Grover; LaGreca & Harrison, 2005). Notably, difficulties with interpersonal functioning persist as individuals move through development. For example, research with college-aged students and emerging adults indicate that interpersonal impairments related to SA continue past adolescence and may be particularly impairing in later life stages (Keller, 2003). Because those with SA experience difficulty in a variety of social situations (e.g., engaging with others, asking for help from professors, or interviewing for jobs), they may respond to the independence associated with emerging adulthood with social withdrawal, which may contribute to less satisfying social relationships with peers (Barry, Nelson, & Christofferson, 2013). Indeed, evidence suggests that during interactions with peers, undergraduate students with elevated SA asked fewer questions and showed less social reciprocation (i.e., reciprocal smiling) than undergraduates relatively lower in SA (Heery & Kring, 2007). Further, adults with SA tend to be rejected at higher rates than those without SA (Voncken, Alden, Bögels, & Roelofs, 2008) and are less likely to be married or have children (Wittchen, Fuetsch, Sonntag, Müller, & Liebowitz, 1999a). These studies suggest that socially anxious individuals experience impaired interpersonal relationships, which may negatively impact their social interactions and well-being across the lifespan.

Social Exclusion and Social Anxiety

As individuals with SA continue to experience difficulties in interpersonal relationships and increased rates of exclusion (Voncken et al., 2008), they may develop a learned avoidant response to social situations they may view as aversive (Ranta, Kaltiala-Heino, Fröjd, & Marttunen, 2013). Avoidant responses may be partially maintained and explained by cognitive theories of SA, which suggest that socially anxious individuals encode more threatening cues during social interactions and are more likely to interpret ambiguous interpersonal interactions as

negative (Clark & Wells, 1995). Empirical evidence aligns with this perspective. For example, individuals with elevated SA who have experienced chronic exclusion in the form of peer victimization experience significantly increased arousal and interpersonal distress in a range of social contexts (e.g., school or work; Erath, Tu, & El-Sheikh, 2012; Kashdan & Wenzel, 2005; Park, Jensen-Campbell, & Miller, 2017). Further, chronic victimization or exclusion is prospectively associated with increased SA and motivations for social withdrawal in emerging adulthood (Ladd, Ettekal, & Kochenderfer-Ladd, 2019; Rosen, Underwood, Gentsch, Rahdar, & Wharton, 2012).

Critically, evidence suggests that in addition to experiencing increased rates of victimization and exclusion, emerging adults with SA may also engage in relational aggression (e.g., social exclusion; Gros, Stauffacher, & Simms, 2009). Studies have suggested that the use of relational aggression (i.e., behaviors that hurt others through threats of harm to interpersonal relationships; Crick & Grotpeter, 1995) in those with increased SA may function to decrease one's perceived exclusion by instead excluding others, which lowers the chances of later direct confrontation (Loudin, Loukas, & Robinson, 2003). These behaviors may also be associated with the individual's negative cognitive biases or fear of negative evaluation (FNE; Leary, 1983) concerning other's actions during social interactions. High FNE levels may cause SA individuals to generalize isolated exclusion experiences to other social partners and view new social interactions as a source of threat instead of an opportunity for affiliation (Maner, DeWall, Baumeister, & Schaller, 2007). Taken together, these data coalesce to suggest that individuals with elevated SA may be more likely to display negative affective and behavioral response patterns (e.g., use of socially avoidant or aggressive behaviors; Erath et al., 2012) to exclusion by peers and classmates.

Social Exclusion and Prosocial Behavior

One set of behaviors that may be particularly affected by social exclusion are prosocial behaviors. Prosocial behaviors include a broad range of actions, such as helping, volunteering, or donating, that are intended to benefit one or more individuals other than oneself (Penner, Dovidio, Piliavin, & Schroeder, 2005). Prosocial behaviors are widespread, intuitive, and are critical in facilitating interpersonal relationships (Keltner, Kogan, Piff, & Saturn, 2014). Engaging in prosocial behaviors results in increased social support (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008), feelings of being close to friends (Waugh & Fredrickson, 2006), and relationship satisfaction (Impett et al., 2010). Critically, prosocial behaviors are dependent on believing that one is a member of a community or group in which individuals mutually aid and support each other (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Although prosocial behaviors may incur a cost to the self, individuals tend to perform them because they support a sense of belongingness in interpersonal relationships (Baumeister & Leary, 1995; Malone, Pillow, & Osman, 2012). Several studies have suggested that the desire for compensatory social interaction leads to prosocial behaviors (e.g., increased effort to help the group or improved performance on tasks related to promoting positive social interactions; Williams & Sommer, 1997; Williams, Cheung, & Choi, 2000). For example, college students who experience or simply imagine social exclusion display a greater interest in meeting others and in awarding more positive evaluations and monetary rewards to new partners (Maner et al., 2007). These studies suggest that exclusion may drive individuals to turn towards others as sources of renewed social connections.

While some evidence has indicated that social exclusion increases affiliative behavior, the literature is not uniform, as other studies have found that exclusion decreases prosocial

responses and cooperative behavior. For example, Twenge et al. (2007) found that college students donated less money, were less helpful after an accident made by the experimenter, and were less willing to help with additional lab experiments following social exclusion. This indicates that there is a need to identify factors that may account for these diverging patterns of results. SA is one factor that may affect prosocial responding following exclusion. Preliminary evidence suggests that while non-anxious individuals generally respond to exclusion with prosocial behaviors, those with SA tend to view social exclusions as confirmations of their negative social expectations (Mallott, Maner, DeWall, & Schmidt, 2009). Further, high levels of SA are negatively related to engaging in explicit (e.g., monetary awards), as well as implicit (e.g., stronger approach tendencies towards rejecters), prosocial behaviors following exclusion (Weerdmeester & Lange, 2019). These studies suggest that individuals with elevated SA demonstrate unique affective and behavioral responses to exclusion (i.e., decreased rates of prosocial behavior), particularly when compared to individuals without SA. However, these studies have only examined prosocial behavior among SA individuals following a relatively circumscribed type of exclusion: explicit exclusion. Needed now, are more rigorous examinations of how SA affects one's tendency to engage in prosocial behavior across a range of interpersonally challenging social situations. Given that social exclusion is associated with a wide array of responses (e.g., increased levels of prosocial behavior, emotional withdrawal), it is likely that different types of exclusion elicit varying affective and behavioral responses. Both implicit and explicit forms of exclusion (i.e., explicit exclusion vs. ignoring) may be important to consider.

Types of Social Exclusion

Explicit social exclusion is characterized by acts such as directly communicating one's

poor social standing, strangers being rude or insulting, and members of one's social group engaging in verbal or physical abuse (MacDonald & Leary, 2005). The clear presence of negative feedback during explicit exclusions discourages future social contact, which may explain why individuals tend to withdraw after explicit exclusion instead of trying to reengage with others (Molden, Lucas, Gardner, Dean, & Knowles, 2009). There is some evidence to suggest that explicit exclusion is associated with decreases in prosocial behavior among non-SA individuals. For example, previous experimental studies have found decreased rates of social engagement (e.g., decreased verbal and eye contact) after an individual was provided with explicit feedback that their interaction partner did not want them to join their group due to an undesirable personal quality (Buckley, Winkel, & Leary, 2004; Maner et al., 2007; Molden et al., 2009; Snoek, 1962).

In contrast to explicit exclusion, ignoring occurs when one's poor social standing is communicated indirectly or when members of one's social group repeatedly refuse to recognize one's input or presence (Twenge, Catanese, & Baumeister, 2003). The distress experienced from being ignored stems from the absence of positive feedback, which may lead an individual to feel that they have failed to gain social connections. The uncertainty concerning whether a non-SA individual was, or will continue to be, ignored could explain why studies found that ignored participants were more willing to attempt reestablishing social contact, often through prosocial behaviors (Molden et al., 2009). For example, Smith and Williams (2004) found that individuals who were passively ignored through their text messages made increased attempts to elicit future responses, while Molden et al. (2009) found that being ignored in an experimental setting was positively related to greater attempts to reengage in social contact. No study to date has examined how SA may affect prosocial behaviors following ignoring.

Along with exclusion and ignoring, it may also be important to consider the potential impact that positive social interactions and acceptance may have on prosocial behavior among individuals with SA. The extant literature suggests that, in non-anxious individuals, peer acceptance is associated with increased self-confidence (Pakaslahti, Karjalainen, & Keltikangas-Järvinen, 2002), improved academic performance, increased displays of prosocial behavior, and more positive beliefs about the self (Oberle, Schonert-Reichl, & Thomson, 2010). In contrast, studies indicate that SA is negatively related to social acceptance (Flanagan, Erath, & Bierman, 2008) and that those with SA may display positivity deficits, which negatively impact one's ability to receive and reciprocate support for positive events (Kashdan, Ferssizidis, Farmer, Adams, & Mcknight, 2013). Additionally, a socially anxious individual's fear of positive evaluation (FPE) may contribute to further discomfort over receiving positive social feedback (Weeks, Heimberg, Rodebaugh, & Norton, 2008); however, this has not been confirmed through experimental studies. Further research is needed to clarify the role that acceptance might play in promoting prosocial behaviors in college students with elevated SA.

The wide range of behaviors and emotions elicited by being explicitly excluded versus being ignored suggest that different types of social exclusion may lead individuals to repair their interpersonal relationships in distinct ways (Molden et al., 2009). For example, experiencing explicit exclusion may lead individuals to prioritize behaviors, such as withdrawing from social contact, that increase the chance of safety and security from future social losses. In contrast, ignoring experiences may result in individuals engaging in behaviors that maximize their chances of reestablishing social contact, despite the possibility of facing social losses (Molden et al., 2009). In light of evidence that those with SA overestimate the likelihood that social interactions will be distressing, it follows that these individuals may be less likely, when

compared to those without SA, to engage in additional social interactions that could result in further social exclusion experiences (Maner & Schmidt, 2006). Few studies, however, have examined how those with SA respond to different types of exclusions.

The Current Study

Although the literature reviewed thus far suggests that individuals with SA may exhibit decreased levels of prosocial behaviors following explicit exclusion (Mallott et al., 2009; Weerdmeester & Lange, 2019), no studies to date have examined if prosocial responses to ignoring versus explicit exclusion or acceptance may vary as a function of SA. The current study was designed to address this gap in the literature by examining differences in prosocial behavior following different types of exclusion among individuals at varying levels of SA. The goal of the study was to elucidate unique interpersonal challenges that individuals with SA face across a variety of social situations. Therefore, the primary aim of this study was to use an experimental design to examine whether elevated SA interacted with the type of social interaction experienced (i.e., ignoring, explicit exclusion, or acceptance) in relation to prosocial behavior. This study utilized three experimental conditions that took place in an online chat room scenario.

Participants were randomly assigned to either 1) a explicit exclusion condition (control condition) in which they received feedback that the other students did not like or accept them; 2) a passive ignoring condition in which two students talked only to each other and did not recognize what the third participant said; and 3) an acceptance condition in which participants were consistently affirmed and accepted by the other students during a conversation.

First, it was hypothesized that, compared to those low in SA, individuals with increased SA levels would engage in decreased rates of prosocial behaviors across all conditions (i.e., there would be a main effect of SA on prosocial behavior). Second, it was hypothesized that the

explicit exclusion condition would produce the lowest rates of prosocial behavior across all conditions (regardless of SA levels); however, in this condition, it was expected that those with SA would engage in fewer prosocial behaviors than those without SA. Third, given that individuals with SA display more negative perceptions of ambiguous social interactions (e.g., being ignored; Clark & Wells, 1995), it was hypothesized that individuals with elevated SA would engage in fewer prosocial behaviors in the ignoring condition, whereas those without SA would engage in higher rates of prosocial behavior in order to reestablish social contact (Molden et al., 2009). Lastly, it was hypothesized that the acceptance condition would produce the highest levels of prosocial behavior in both the SA and non-SA groups; however, it was expected that individuals with SA would engage in relatively lower levels of prosocial behavior when compared to those without SA. Given the high levels of comorbidity between depression and SA (Stein et al., 2001), depressive symptoms were included as a covariate in all analyses, in order to examine the unique effects of SA on prosocial behavior following social interactions.

CHAPTER II

METHOD

Participants

The initial sample for this online study consisted of 391 participants. Participant data was excluded if any items were left unanswered, if participants failed the attention check item, or if participants did not re-consent for their data to be used after they were debriefed. After the data was cleaned, the sample was comprised of 305 college students (70 males; 22.95%) aged 18 or over ($M_{\text{age}} = 18.64$ years, $SD = 1.28$ years). The sample was primarily White and female. Please see Table 1 for more demographic information. The sample was drawn from the SONA System, which is a web-based platform that manages research participation in the Psychology Department at the University of Mississippi. Participants received one SONA credit for their participation.

Measures

Demographics. Participants were asked to self-report their age, gender, relationship status, ethnicity, racial background, state of birth, major, and year in school.

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The Social Interaction Anxiety Scale (SIAS) is a 20-item self-report measure that assesses anxiety in social situations. Items were rated on a 5-point Likert scale from 0 (*not at all characteristic of me*) to 4 (*extremely characteristic of me*). The items describe an individual's typical affective, behavioral,

or cognitive reactions to social interactions with dyads or groups (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992). The SIAS includes items such as “I get nervous if I have to speak with someone in authority” or “I am unsure whether to greet someone I know only slightly.” Higher scores indicate higher levels of social interactional anxiety. A score of 34 or above is commonly used as the clinical cutoff for social anxiety on the SIAS (Heimberg et al., 1992). The SIAS has satisfactory psychometric properties (Mattick & Clarke, 1998) and high internal consistency in the current study ($\alpha = 0.94$).

Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). The Depression Anxiety Stress Scales (DASS-21) is a 21-item self-report measure that assesses symptoms of depression, anxiety, and stress over the past week. Items are rated on a 4-point Likert scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). The DASS-21 includes items such as “I find it difficult to work up the initiative to do things” or “I felt that I was using a lot of nervous energy.” The DASS-21 yields separate scores for the depression, anxiety, and stress subscales. It has strong psychometric properties and high internal consistency in the current study (total scale, $\alpha = .88$; depression scale, $\alpha = .93$; anxiety scale, $\alpha = .88$; and stress scale, $\alpha = .87$).

Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002). The Prosocial Tendencies Measure (PTM) is a 23-item self-report measure that assesses 6 types of prosocial behaviors: emotional, dire, public, altruistic, compliant, and anonymous. Items are rated on a 5-point Likert scale from 1 (*does not describe me at all*) to 5 (*describes me greatly*). The PTM includes items such as “I respond to helping others best when the situation is highly emotional” or “I can help others best when people are watching me.” The 23 items are averaged to produce a composite score. The PTM has acceptable psychometric properties in the current study ($\alpha = 0.79$;

Carlo & Randall, 2002).

Mood (Wolpe, 1958). Self-reported conflict reactivity in participants was measured in three ways. First, self-reported anxiety was assessed with a subjective units of distress scale measure (SUDS-A; Wolpe, 1958). Participants were asked to indicate self-reported anxiety on a scale of 0 to 100 (0 = *no anxiety* to 100 = *extreme anxiety*) after the chat room task. Second, self-reported anger in participants was assessed with a subjective units of distress scale measure (SUDS-A; Wolpe, 1958). Participants were asked to indicate self-reported anger on a scale from 0 to 100 (0 = *no anger* to 100 = *extreme anger*) after the chat room task. Third, self-reported happiness in participants was assessed with a subjective units of distress scale measure (SUDS-PA; Wolpe, 1958). Participants were asked to indicate self-reported happiness on a scale from 0 to 100 (0 = *not happy at all* to 100 = *extremely happy*) after the chat room task. Importantly, due to experimenter error, SUDS data was only collected after the task, not before.

Attention check item. An attention check item was employed in the middle of the study to identify non-optimal data points. Participants were asked “What color is the sky” and given three response choices (blue, green, or yellow). Participant data was retained if the individual selected the “blue” option.

Chat room exclusion paradigm (Molden et al., 2009). The chat room paradigm was used to assess whether social anxiety levels moderated the association between exclusion versus ignoring and an individual’s rate of prosocial behaviors. Participants were told they would be participating in a discussion through an online chat room with two other students and that each member would see the messages sent by the other participants. In reality, however, messages from the two students were from a series of preprogrammed responses, and the chat room paradigm did not involve any real interactions. One of three versions of the script was randomly

administered to each participant: i) an active exclusion script in which participants received feedback that the other students do not like or accept them; ii) a passive ignoring script in which the two students talked only to each other and did not recognize what the third participant said; and iii) a acceptance script in which participants were consistently affirmed and accepted by the other students during the conversation. Please see Appendix A for a copy of each script.

Reward assignment task. The reward assignment task was modeled off of procedures used by Mallott et al. (2009). Following the chat room paradigm, participants were told that they, along with the chat room members, would be involved in a role-play scenario in which one of them would play the manager of creative activities and the others would be creative task makers. Participants were told the roles were randomly assigned; however, the selection process was rigged, and the participant was always assigned the manager role. Although the chat room procedure involved two confederates (Participants A and C), participants were told that Participant A had to leave unexpectedly because they forgot they had a meeting with a professor at that time. The participant therefore only evaluated the creativity of Participant C's drawing. Participant C's comments during the ignoring and explicit exclusion chat room conditions had a more negative valence than Participant A's; allowing participants to only judge Participant C's task performance may have prevented them from making creativity judgments based on the content of one's comments alone.

As a manager, participants were asked to rate the creativity of drawings done by the other task makers (i.e., confederates) on a scale from 0 (*not at all creative*) to 20 (*very creative*). An undergraduate research assistant produced the drawing for this task. As has been done in previous work, undergraduate research assistants created several different drawings that were pilot tested and pre-rated by 58 participants to ensure they were viewed as moderately creative.

The selected drawing was rated as moderately creative ($M = 9.96$ on a 0 to 20 scale; Mallott et al., 2009). Please see Appendix B for the drawing. Managers were provided with 20 quarters after the chat room paradigm (corresponding to the 20-point creativity rating scale), which allowed them to reward the other task makers with up to 5 dollars in cash. Managers were told to reward the other task makers with 25 cents for each creativity point awarded.

Managers were then told that the portion of the 5 dollars they did not reward to the other task makers would be placed into a raffle that would be awarded to one of the managers at the end of the study. Any money awarded to the task makers directly reduced the manager's possible earnings. The amount of money donated to the task maker was the dependent measure of prosocial behavior.

Manipulation check. To ensure the reliability of the manipulation, participants completed a manipulation check questionnaire (Derfler-Rozin, Pillutla, & Thau, 2010) after the chat room paradigm. The scale assessed participant perceptions of social exclusion. It included three items ("I feel rejected," "I feel ignored," and "I feel included") that were rated on a 5-point scale from 1 (*not at all*) to 5 (*definitely*).

Believability check. Following the manipulations, participants answered a one-question item on the believability of the paradigm (i.e., How believable were the tasks you completed today?). This item was rated on a 10-point scale from 1 (*not at all*) to 10 (*very much*).

Procedure

Participants were recruited through the SONA System, which was managed by the Psychology Department at the University of Mississippi. The study was conducted fully through Qualtrics. After informed consent was obtained, participants were asked to fill out the measures described above (randomly ordered to limit order effects). They also completed affective

measures after the chat room paradigm. Each participant then completed the chat room paradigm where they were randomly assigned to the acceptance, explicit exclusion, or ignoring condition. This was followed by the reward assignment task. After the participant finished both of these tasks, they were debriefed and compensated with course credit.

Analytic Approach

The study data set was cleaned prior to conducting data analyses. The SA and depression variables were mean centered prior to creating the interaction term. The SA and depression variables were analyzed for outliers using z-score transformations. Condition was dummy coded by creating three variables, each representing a different condition (i.e., explicit exclusion, ignoring, and acceptance). The exclusion condition acted as the reference group during analyses. Three interaction terms were created to examine potential SA by condition interactions. Missing data was addressed through listwise deletion.

To address hypotheses 1, 2, 3, and 4, a series of hierarchical regressions were conducted to examine main effects and differences in prosocial behavior rates in those with SA across each of the experimental conditions (i.e., explicit exclusion, ignoring, and acceptance). All assumptions for conducting regression analyses were met. A biased-corrected 95% confidence interval based on 5,000 accelerated bootstrapped samples was used. The type of condition and SA level was entered as predictors in the first and second steps, respectively, while prosocial behavior levels were entered as the dependent variable. In the third step of the regression, an SA by condition interaction was entered as a predictor. Depressive symptoms were entered as a covariate in each regression.

Additionally, a series of ANOVAs were conducted to examine whether random assignment was effective in terms of age, depression, gender, ethnicity, and the 6 types of

prosocial tendencies. An ANOVA was also run to examine whether post-SUDS ratings differed as a function of condition.

CHAPTER III

RESULTS

Checks of the Efficacy of Random Assignment

Random assignment was effective in terms of age [$F(2, 285) = .34, p = .722$], SA [$F(2, 285) = 1.46, p = .231$], and depression levels [$F(2, 285) = 1.65, p = .198$]. Gender, $\chi^2(1) = 3.00, p = .566$ and ethnicity, $\chi^2(17) = 15.72, p = .627$ distributions did not significantly differ among the three conditions. Random assignment was also effective in terms of public prosocial behaviors [$F(17, 282) = .50, p = .950$], emotional prosocial behaviors [$F(17, 282) = .70, p = .803$], altruistic prosocial behaviors [$F(21, 277) = .87, p = .629$], dire prosocial behaviors [$F(13, 285) = .37, p = .979$], compliant prosocial behaviors [$F(8, 290) = .69, p = .703$] and anonymous prosocial behaviors [$F(2, 296) = 1.65, p = .195$].

Descriptive Analyses

See Table 2 for descriptive analyses and zero order correlations among descriptive and outcome variables. As expected, SA was positively associated with depression. One hundred and three participants met criteria for SA using the SIAS cutoff (scores of 34 or above). In contrast to hypotheses, SA was not significantly associated with the number of creativity quarters assigned in the three separate conditions.

SA and depression levels were positively associated with post-task anger and anxiety and negatively associated with post-task happiness. Post-task anger was positively associated with post-task anxiety, while post-task anger and anxiety were negatively associated with post-task

happiness. Post-task affective ratings differed by condition. Compared to those in the explicit exclusion ($M = 28.56$) and ignoring ($M = 37.49$) conditions, those in the acceptance condition ($M = 71.70$) reported the highest happiness levels. Participants in the explicit exclusion condition ($M = 33.85$) reported higher anger levels than those in the ignoring ($M = 20.60$) and acceptance ($M = 4.28$) conditions. The explicit exclusion ($M = 31.45$) condition also reported higher anxiety levels than those in the ignoring ($M = 28.52$) and acceptance conditions ($M = 14.20$).

Manipulation Check

Participants significantly differed, as a function of condition, in post-task reports of feeling ignored, excluded, or accepted. Exclusion ratings significantly differed by condition [$F(2, 245) = 72.12, p < .001$]. The effect size was large ($\eta_p^2 = .34$). Specifically, participants in the exclusion condition reported significantly higher exclusion levels ($M = 3.56$) than those in the acceptance ($M = 1.22, p < .001$) and ignoring ($M = 2.58, p < .001$) conditions. Ignoring ratings significantly differed by condition [$F(2, 245) = 45.17, p < .001$]. The effect size was large ($\eta_p^2 = .27$). Those in the ignoring condition ($M = 3.29$) endorsed significantly higher feelings of ignoring than those in the acceptance ($M = 1.32, p < .001$) and exclusion conditions ($M = 2.51, p < .001$). Acceptance ratings significantly differed by condition [$F(2, 245) = 89.94, p < .001$]. The effect size was large ($\eta_p^2 = .41$). Participants in the acceptance condition ($M = 4.55$) reported significantly higher acceptance levels than those in the ignoring ($M = 2.25, p < .001$) and exclusion conditions ($M = 2.36, p < .001$). Acceptance ratings did not significantly differ between the ignoring ($M = 2.25, p = .855$) and exclusion conditions ($M = 2.36, p = .855$).

Participant affect following the chat room paradigm significantly differed by condition. Please see Table 3 for the full output. Happiness levels significantly differed by condition [$F(2, 248) = 49.71, p < .001$]. The effect size was large ($\eta_p^2 = .27$). Participants in the acceptance

condition reported significantly higher happiness levels ($M = 71.70$) than participants in the ignoring ($M = 37.49, p < .001$) and explicit exclusion ($M = 28.56, p < .001$) conditions. There was not a significant difference in happiness levels between the ignoring and explicit exclusion conditions ($p = .12$). Anger levels significantly differed by condition [$F(2, 248) = 27.04, p < .001$]. The effect size was large ($\eta_p^2 = .18$). Anger levels significantly differed among the acceptance ($M = 4.28, p < .001$), ignoring ($M = 20.60, p < .001$), and explicit exclusion ($M = 33.85, p = .003$) conditions. Anxiety levels significantly differed by condition [$F(2, 248) = 8.05, p < .001$]. The effect size was medium ($\eta_p^2 = .06$). Anxiety levels significantly differed between the acceptance ($M = 14.20$) and explicit exclusion ($M = 31.45, p = .001$) and the acceptance ($M = 14.20$) and ignoring ($M = 28.52, p = .006$) conditions but not between the ignoring ($M = 28.52$) and explicit exclusion ($M = 31.45, p = .792$) conditions

Primary Analyses

Please see Table 4 for the full hierarchical regression output.

Hypothesis 1. In contrast to our first hypothesis, there was not a main effect of SA on prosocial behavior (i.e., amount of creativity quarters assigned) across conditions [$F(2, 293) = .679, p = .551, R^2 = .01$]. Condition ($b = -.31, SE = .33, p = .383, 95\% \text{ CI } [-1.02, .41]$) and SA ($b = -.16, SE = .20, p = .441, 95\% \text{ CI } [-.56, .25]$) were not associated with prosocial behavior. There were no differences between groups in terms of the number of quarters assigned as a function of experimental condition or SA.

Hypotheses 2, 3, and 4. There was not a significant interaction between SA and condition type on prosocial behavior levels [$F(2, 291) = .08, p = .92, R^2 = .01$]. The effect size was small ($f^2 = .01$). Specifically, there was not a significant interaction between SA levels and the acceptance condition on prosocial behavior ($b = -.01, SE = .05, p = .890, 95\% \text{ CI } [-.10, .08]$).

There was also not a significant interaction between SA levels and the ignoring condition on prosocial behavior ($b = .01$, $SE = .04$, $p = .806$, 95% CI $[-.07, .09]$). This suggests that the interaction between SA levels and the ignoring condition did not significantly differ from those in the explicit exclusion condition.

Exploratory Post-hoc Analyses

An exploratory post-hoc analysis was performed to examine the effect of paradigm believability on prosocial behavior levels. There was a significant effect of believability levels on prosocial behavior [$F(1, 267) = .04$, $p = .002$, $R^2 = .21$]. The effect size was medium ($f^2 = .27$). Believability levels were significantly associated with prosocial behavior levels ($b = .32$, $SE = .10$, 95% CI $[.12, .52]$). The more believable participants viewed the task, the more likely they were to assign creativity quarters. Believability levels [$F(1, 265) = .01$, $p = .764$, $R^2 = .01$] did not significantly vary as a function of SA ($b = -.02$, $SE = .02$, 95% CI $[-.07, .02]$) or depression ($b = -.01$, $SE = -.05$, 95% CI $[-.12, .08]$) levels. The effect size was small ($f^2 = .01$).

Believability levels significantly varied as a function of condition [$F(2, 274) = 3.96$, $p = .005$]. The effect size was small ($\eta^2 = .03$). Participants in the acceptance condition ($M = 6.27$) reported significantly higher believability levels than those in the explicit exclusion condition ($M = 5.04$, $p = .027$). Believability levels did not significantly differ between the acceptance and ignoring condition ($M = 5.58$, $p = .266$). Believability levels did not significantly differ between the ignoring ($M = 5.58$) and explicit exclusion conditions ($M = 5.04$, $p = .453$).

CHAPTER IV

DISCUSSION

Improving our understanding of the unique interpersonal challenges that individuals with SA encounter is critical for efforts to identify and promote more adaptive, approach-oriented behaviors in these populations during social interactions. Extant research suggests that individuals with SA engage in decreased rates of implicit and explicit prosocial behavior following social exclusions (Mallott et al., 2009). No work to date, however, has examined the influence of different types of social exclusion on prosocial behavior in individuals with SA, despite evidence that the type of exclusion experienced (i.e., ignoring versus explicit exclusion) influences subsequent prosocial responses in non-clinical populations (Molden et al., 2009). To address this gap in the literature, the current study used an online chat room paradigm that simulated different types of exclusion scenarios to examine whether elevated SA levels interacted with the type of social interaction experienced in relation to prosocial behavior.

Effect of Conditions

Study results indicated a main effect of condition on participant affective reactions post-manipulation, which suggests that the manipulation produced unique affective responses in each condition. Participants in the acceptance condition reported the highest levels of happiness and the lowest anger and anxiety levels. Compared to the ignoring and acceptance conditions, participants who experienced the explicit exclusion condition reported the highest levels of anger

and anxiety and the lowest happiness levels. In line with other studies (e.g., Blackhart, Nelson, Knowles, & Baumeister, 2009), these effects suggest that being explicitly excluded contributes to significant negative emotional states. Compared to the acceptance and explicit exclusion conditions, participants in the ignoring condition experienced moderate levels of post-manipulation anger, anxiety, and happiness. These moderate levels may be accounted for by the more ambiguous nature (i.e., whether the individual viewed the ignoring experience as threatening or harmful) of being ignored. Indeed, evidence suggests that, compared to those who are explicitly excluded, those who are ignored report significantly less agitation and anger and were more optimistic about social reengagement (Molden et al., 2009). Future research would benefit from examining whether responses to being ignored vary as a function of transdiagnostic processes relevant to SA and other forms of psychopathology (e.g., rejection sensitivity or fear of negative evaluation).

In contrast to our first hypothesis, there was not a main effect of SA on the relationship between different types of social exclusion and prosocial behavior levels. Specifically, SA levels did not significantly influence the number of creativity quarters awarded, regardless of the participant's assigned condition. This finding is in contrast to existing literature that has observed decreased levels of prosocial behavior in individuals with SA following explicit exclusion (Mallott et al., 2009). Several factors may have contributed to our non-significant result. Previous studies that have found an inverse relationship between SA and prosocial behavior levels have primarily utilized in-person reward assignment tasks (Molden et al., 2009) or in-person explicit exclusion or ignoring partners (use of study confederates; Maner et al., 2007). The current study employed an online creativity rating activity and subsequent assignment of money. This process may have been too abstract to be influenced by condition type or SA levels

(Weerdmeester & Lange, 2019). These results might also be explained by the timeframe in which social exclusion effects were examined. Indeed, Zadro, Boland, and Richardson (2005) found that SA did not immediately moderate the relationship between explicit exclusion or ignoring and primary needs (e.g., self-esteem, belongingness); they only observed significant moderation effects 45-minutes after social exclusions occurred. Importantly, Zadro et al. (2005) did not examine how SA and social exclusion impacted prosocial behaviors, which limits any conclusions that might be made about social exclusion timeframes in the current study. Future studies on SA, social exclusion, and prosocial behavior should be mindful of observing the impact of potential short versus long-term effects of exclusion. For example, these studies could obtain SUDs ratings and observe levels of prosocial behavior at different intervals (e.g., 0 minutes, 15-minutes, 30-minutes) following the manipulation to examine the effect of time on social exclusion experiences.

Contrary to hypotheses 2, 3, and 4, there was not a significant interaction between SA levels and condition type on prosocial behavior levels. There may be several explanations for the lack of significant findings. It is possible that our unexpected results may be due to employing online rather than in-person manipulations. Previous research has found differences in participant behavior following in-person versus online ignoring and explicit exclusion experiences (Williams et al., 2002). For example, Williams et al. (2002) observed that participants that were explicitly excluded or ignored in online chat rooms tended to persist in the interaction longer and evidence greater feelings of control and self-esteem than their in-person counterparts. Filipkowski and Smyth (2012) further found that ignoring scenarios produced more negative affect during in-person versus online chat rooms. It is possible that social exclusions in online chat rooms produce fewer negative affective reactions, which may subsequently influence an

individual's post-exclusion behaviors (e.g., level of prosocial behavior). Neither the Williams et al. (2002) or Filipkowski and Smyth (2012) studies examined how different types of social exclusions, affective responses, and prosocial behavior may interact in those with SA, which highlights the need for future work in this area.

Additionally, the current study sample evidenced a relatively low score on the SIAS (Mattick & Clarke, 1998). The mean score was below the clinical threshold for SA and may not have significantly influenced participant's social interactions. Other studies on SA and explicit exclusion (e.g., Mallott et al., 2009) only observed significant interactions in those with SA levels that were two standard deviations above the SIAS (Mattick & Clarke, 1998) mean score. Indeed, Mallott et al. (2009) found a non-significant interaction between SA and explicit exclusion in those with SA levels that were only one standard deviation above the SIAS (Mattick & Clarke, 1998) mean score. Importantly, the Mallott et al. (2009) study had a small sample size ($n = 31$), and the few participants who met criteria for SA had high levels of symptoms, which may have contributed to a different pattern of results. Future work should endeavor to replicate the Mallott et al. (2009) findings in a larger sample. Lastly, it is important to note that an interaction between SA levels and condition type on prosocial behavior levels may not exist; more work is needed to examine this possibility.

Limitations and Future Directions

The results of this study should be interpreted in light of several limitations. First, SA levels were only examined through the SIAS (Mattick & Clarke, 1989). Related studies have utilized self-report measures, such as the SIAS (Mattick & Clarke, 1989), in addition to structured diagnostic interviews (e.g., Anxiety Disorders Interview Schedule for DSM-IV [ADIS-IV]; Mallott et al., 2009), which may have provided more reliable diagnoses.

Additionally, less than one-third of the current sample exceeded the diagnostic threshold on the SIAS (Mattick & Clarke, 1989) and those who did exceed the threshold did not report severely elevated symptoms. Our results, therefore, may not fully generalize to young adult populations who have been clinically diagnosed with SA or other forms of psychopathology. Future work would benefit from conducting this study in clinical populations. Additionally, our sample was collected during the COVID-19 pandemic, which may have affected several variables of interest, particularly if participants were feeling distressed. The sample was also highly homogenous (i.e., white, female, college-aged students) which may limit generalizability to more diverse populations. Given evidence that rates of SA and interpersonal difficulties may differ by sex, race, or ethnicity (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010), it will be critical for future work to examine the present research questions in a more diverse sample.

An additional limitation is the low believability levels of the experimental paradigm. Participants rated the paradigm as moderately believable ($M = 5.64$, $SD = 3.03$, range = 0 – 10) which may have influenced their levels of attention and prosocial behavior during the tasks. Participants who viewed the paradigm as highly unbelievable may have also been less susceptible to the manipulation. It would be beneficial to repeat this study using a more realistic in-person paradigm and examine whether believability levels continue to significantly influence results. It might also be worthwhile to incorporate participant video recordings within an in-person study, as existing research has indicated that SA levels significantly influence levels of eye contact and vocal quality with confederates during explicit exclusions (Mallott et al., 2009). Examining a greater range of nonverbal behavioral measures during these interpersonal interactions may allow researchers to better identify unique communication differences in those with and without SA during social interactions.

Lastly, the current study neglected to include SUDs ratings for happiness, anger, and anxiety levels prior to the manipulation. We were unable to examine whether affective reactions may have changed as a result of the experimental condition. Other studies in this area have found that explicit exclusion and ignoring conditions produce unique changes in non-clinical (Molden et al., 2009) and SA (Weerdmeester & Lange, 2019) participant affect levels; however, the current study was unable to assess whether changes in affective reactions interacted with SA or prosocial behavior levels. To examine the long-term effects of social exclusions on affective reactions and prosocial behavior, future studies might also consider obtaining SUDs ratings after a longer timeframe following exclusion.

Conclusion

The current study examined the impact of SA levels on individual's prosocial behavior following different forms of exclusion. This study extends the literature by demonstrating that SA does not appear to significantly moderate the relationship between different types of social exclusions and prosocial behavior levels. Considering the study limitations and lack of research in this area, more work is needed to improve our understanding of these associations. Future work on this topic may have important implications for promoting interpersonal styles (e.g., increased compensatory prosocial behavior) that may decrease the likelihood of exclusion in those with SA.

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APPENDIX

Appendix A

Acceptance condition

A: How's it going?

B:-----

C: Not too bad...so who has the questions?

A: I do. How about this one, do you think that it's right that smoking will be banned in bars?

B:-----

C: I feel the same way, B :)

A: I'm with you guys!

B:-----

C: Each side has made some good points, yet I'm pretty confident about my opinion.

A: I can't believe some of the newspaper editorials that have been written!

B:-----

C: I know what you mean...the media has really jumped on this.

A: I hear ya, my opinions are pretty strong, but the media could be more objective.

B:-----

C: Good point, B :)

A: How about another question from the list, this one is kinda about the media: how important is music to you?

B:-----

C: That's cool B.

Ignored Condition

A: How's it going?

B:-----

C: Not too bad...so who has the questions?

A: I do. How about this one, do you think that it's right that smoking will be banned in bars?

B:-----

C: This is such a big topic in my apartment complex. We have got a lot of smokers.

A: What complex do you live in, c?

B:-----

C: 1644 Ridge

A: Wow, no way! I live right next door to you c.

B:-----

C: That's cool. Can you hear the guy who plays really loud rap music late at night?

A: Yeah, he totally drives me nuts!

B:-----

C: Me too, I wish he would be at least a little bit respectful.

A: Given our current discussion, c, how about this question from the list...how important is music to you?

B:-----

C: It's pretty important, it is a big part of my life

Explicit Exclusion Condition

A: Hi, how's it going?

B:-----

C: Not too bad...so who has the questions?

A: I do, how about this one, do you think that it's right that smoking will be banned in bars?

B:-----

C: Really, you're kidding right?

A: Are you for real, b?

B:-----

C: Wow, that's weird. I don't understand people like you.

A: I totally hear you c, but we probably shouldn't get into a fight over this.

B:-----

C: The bar owners and politicians fight over it, but we should be more civilized.

A: I feel that it's unfair to judge others.

B:-----

C: This conversation is getting on my nerves...lets talk about something else.

A: Fine, where are you from b?

B:-----

C: I'm from Atlanta, where people are open-minded.

Appendix B



Table 1
Descriptive Data for Demographic Variables as a Function of Condition.

	Ignoring	Explicit Exclusion	Acceptance
<i>n</i> = 305			
Age (SD)	18.64 (1.19)	18.69 (1.24)	18.56 (1.43)
Gender (Male, n)	19 (19.0%)	23 (23.0%)	25 (25.0%)
Class Year			
Freshman	76 (76.0%)	79 (79.0%)	85 (85.0%)
Sophomore	17 (17.0%)	12 (12.0%)	9 (9.0%)
Junior	5 (5.0%)	7 (7.0%)	4 (4.0%)
Senior	2 (2.0%)	1 (1.0%)	2 (2.0%)
Fifth Year and Up	0 (0.0%)	1 (1.0%)	0 (0.0%)
Race/Ethnicity*			
White	81 (81.0%)	83 (83.0%)	80 (80.0%)
Asian	4 (4.0%)	3 (3.0%)	1 (1.0%)
African American	8 (8.0%)	9 (9.0%)	7 (7.0%)
Hispanic/Latino	3 (3.0%)	1 (1.0%)	5 (5.0%)
American Indian/Alaskan Native	0 (0.0%)	1 (1.0%)	0 (0.0%)
Multiple race	3 (3.0%)	3 (3.0%)	5 (5.0%)
Other	0 (0.0%)	0 (0.0%)	2 (2.0%)

*Note that race/ethnicity percentages do not sum to 100 because race/ethnicity categories were not mutually exclusive.

Table 2
Descriptive Data and Zero-Order Correlations Between Relevant Variables

	M (SD)	1	2	3	4	5	6
1. SA	25.59 (15.37)		.59**	.23**	.42**	-.25**	-.07
2. Depression	6.84 (8.89)			.23**	.37**	-.20**	-.05
3. Post-task anger	18.29 (27.61)				.57**	-.44**	-.14*
4. Post-task anxiety	24.02 (29.75)					-.35**	-.09
5. Post-task happiness	45.75 (34.50)						.25**
6. Quarters assigned	11.84 (8.89)						

* $p < .05$ (two-tailed); ** $p < .01$ (two-tailed)

Table 3
Post-task SUDs Ratings and Believability Levels as a Function of Condition

	Explicit Exclusion condition	Ignoring condition	Acceptance condition
Happiness mean	28.56	37.49 ^a	71.70 ^a
Anger mean	33.85 ^b	20.60 ^b	4.28 ^b
Anxiety mean	31.45 ^c	28.52 ^c	14.20 ^c
Believability mean	5.04 ^d	5.58	6.27 ^d

Note. a = significant difference in happiness ratings between certain conditions; b = significant difference in anger ratings between certain conditions; c = significant difference in anxiety ratings between certain conditions; d = significant difference in believability ratings between certain conditions.

Table 4
Condition, SA level, and Condition X SA Level as Predictors of Creativity Quarters

		ΔR^2	B [95% CI]	β	SE	sr^2
<i>Dependent Variable: Creativity Quarters</i>		0.004				
Step 1	Depression		-.04 [-.11, .09]	-.07	.04	.004
Step 2	Condition	.008	-.31 [-1.02, .41]	-.05	.34	.05
	SIAS		-.16 [-.56, .25]	-.05	.37	.05
Step 3		.010				
	Acceptance X SIAS		-.01 [-.10, .08]	-.01	.05	.01
	Ignore X SIAS		.01 [-.07, .09]	.02	.04	.02

Note. Explicit exclusion used as the dummy coded reference group.

SIAS = Social Anxiety Interaction Scale; Acceptance X SIAS = Interaction between Acceptance Condition and SIAS Score; Ignore X SIAS = Interaction between Ignoring Condition and SIAS Score.

VITA

Hannah Friedman, B.A.

Education:

- August 2019-Present University of Mississippi, Oxford, MS
Graduate Student, Clinical Psychology Ph.D. Program
Advisor: Sarah A. Bilsky, Ph.D.
GPA: 4.00
- August 2015-May 2019 Emory University, Atlanta, GA
B.A., Psychology, May 2019
Honors: *summa cum laude*, Phi Beta Kappa
GPA: 3.94
Honors Thesis: *The genetic and environmental etiology of social phobia in youth and the etiological overlap between social phobia, shyness, and extraversion.*
Thesis Advisor: Irwin Waldman, Ph.D.

Honors and Awards:

- August 2019 – May 2023 Graduate Recruitment Fellowship, University of Mississippi
April 2019 *Phi Beta Kappa*, Emory University
March 2019 Highest Honors (*summa cum laude*) for Psychology Honors Thesis
August 2018 – May 2019 Psychology Honors Program, Emory University
March 2018 – May 2019 Psi Chi, Emory University
April 2017 Top Poster Presentation Award, Emory University Psychology Undergraduate Research Symposium
August 2016 – May 2019 Undergraduate Associate Scholar in Initiative to Maximize Student Development (IMSD), Emory University
August 2016 – May 2017 Research Partners Program (RPP), Emory University
Fall 2015 – May 2019 Dean's List, Emory University

Publications

Manuscripts Published in Peer-Reviewed Journals:

2. Bilsky, S. A., & Friedman, H. P. (2021). A preliminary examination of the interaction between maternal generalized anxiety disorder and offspring negative affect in relation to maternal worry about offspring and perceptions of psychological control. *Child Psychiatry and Human Development*, <https://doi.org/10.1007/s10578-021-01156-z>
1. Bilsky, S. A., Friedman, H. P., Karlovich, A., Smith, M., & Leen-Feldner, E. W. (2020). The interaction between sleep disturbances and anxiety sensitivity in relation to adolescent anger responses to parent adolescent conflict. *Journal of Adolescence*, 84, 69 - 77. <https://doi.org/10.1016/j.adolescence.2020.08.005>

Manuscripts Under Review in Peer-Reviewed Journals:

1. Bilsky, S.A., Lubers, M.J., Cloutier, R.M., Dietch, J.R., Taylor, D.J., & **Friedman, H.P.** (2021). Cigarette use, anxiety, and insomnia from adolescence to early adulthood: A longitudinal indirect effects test. *Received a revise and resubmit from Addictive Behaviors*.

Manuscripts in Preparation:

2. Poore, H., **Friedman, H.P.**, Watts, A., & Waldman, I. (in prep). The genetic and environmental etiology of social phobia in youth and the etiological overlap between social phobia, shyness, and extraversion.
1. **Friedman, H.P.**, Bilsky, S.A., Lubers, M. (in prep). Examining the indirect effect of parental beliefs about anxiety in the association between parental anxiety and parenting behaviors.

Invited Book Chapters:

1. Bilsky, S.A., **Friedman, H.P.** (in prep). Substance Use Disorders in Children and Adolescents. In G. Asmundson, E.A. Storch (Eds.), *Comprehensive Clinical Psychology*.

Poster Presentations:

7. Lubers, M.J., **Friedman, H.P.**, & Bilsky, S.A. (November, 2021). *Disgust proneness and the encouragement of COVID-19 safety behaviors in a parent sample*. Poster submitted for presentation at the 55th annual meeting of the Association of Behavioral and Cognitive Therapies, New Orleans, LA.
6. **Friedman, H.P.**, Lubers, M.J., Bilsky, S.A. (November, 2021). *Examining the Indirect Effect of Parental Beliefs about Offspring Anxiety in the Association Between Parental Anxiety and Parenting Behaviors*. Poster submitted for presentation at the 55th annual meeting of the Association of Behavioral and Cognitive Therapies, New Orleans, LA.
5. Olson, E.K., Lubers, M.J., **Friedman, H.P.**, Bilsky, S.A. (November, 2021) *The interaction between anxiety sensitivity and sleep disturbances in relation to adolescent symptoms of panic disorder*. Poster submitted for presentation at the Association for Behavioral and Cognitive Therapies Annual Convention, New Orleans, LA.
4. **Friedman, H.P.**, Lubers, M.J., Bilsky, S.A. (April, 2021). *Adolescent sleep difficulties and maternal and adolescent conflict reactivity among families with elevated anxiety*. Poster presented at Society for Research on Child Development Virtual Biennial Meeting.

3. **Friedman, H.P.**, Poore, H. & Waldman, I. (2019, April). *Examining the genetic and environmental etiology of social phobia in children and adolescents and the etiological overlap between shyness, extraversion, and social phobia*. Poster presented at Psychology Undergraduate Research Symposium at Emory University, Atlanta, Georgia.
2. **Friedman, H.P.**, Poore, H. & Waldman, I. (2017, April). *A longitudinal twin study of child and adult psychopathology*. Poster presented at Undergraduate Research Symposium at Emory University, Atlanta, Georgia.
1. **Friedman, H.P.**, Chae, S., Hunter, A., & Palbar, T. (2017, April). *Nature vs. nurture: What's influencing your self-efficacy?* Poster presented at Psychology Undergraduate Research Symposium at Emory University, Atlanta, Georgia.

Professional Presentations:

1. Bilsky, S.A., Feldner, M.T., **Friedman, H.P.**, Leen-Feldner, E.W. (2020, March). *An experimental test of the impact of adolescent anxiety on parental sick role reinforcement behavior*. Paper accepted for presentation at the biannual meeting of the Society for Research on Adolescence, San Diego, CA.

Symposiums:

1. Bilsky, S.A., **Friedman, H.F.**, & Luber, M.J. (November, 2021). A Preliminary Examination of the Interaction between Maternal Generalized Anxiety Disorder and Offspring Negative Affect in Relation to Maladaptive Parenting Behaviors. In S. Francis (chair) and K. Allen (discussant). Parenting Styles and Behaviors as Considered in the Context of Child and Adolescent Internalizing Presentations. Symposium submitted to the 55th annual meeting of the Association of Behavioral and Cognitive Therapies, New Orleans, LA.

Research Experience:

August 2019 – Present

Graduate Student Researcher, Parent and Adolescent Anxiety (PANDAA) Lab, Department of Psychology, The University of Mississippi, Oxford, MS

Responsibilities:

- Assisting with data collection, study recruitment, and conducting clinical interviews for study examining how parent and adolescent emotional vulnerability factors bi-directionally influence development of anxiety disorders throughout adolescence.
- Supervises undergraduate research assistants in conducting research in the PANDAA lab.
- Develops and maintains recruitment database listing locations and business where study flyers may be posted.
- Created and updates PANDAA lab website to display current research projects and lab information.

October 2018 – April 2019

Education Sciences Research Core and Preschool Lab Intern

Preschool Education Lab
Marcus Autism Center
Atlanta, GA

Responsibilities:

1. Worked with teachers in an innovative and inclusive preschool for children with and without ASD.
2. Performed behavioral coding and video data management on study examining effectiveness of the Social Emotional Engagement – Knowledge and Skills (SEE-KS) educational framework in promoting student engagement in the preschool and other local area schools.
3. Performed data collection, entry, and coding on study examining the effects of inclusion at Tapestry public charter school in Doraville, GA, which serves middle and high school students with and without ASD.

August 2018 – May 2019

Honors Thesis, Department of Psychology, Emory
University, Atlanta, GA

Responsibilities:

- Cleaned and prepared (e.g., reverse coded variables, calculated scales, etc.) SPSS data files on social phobia, extraversion, and shyness items for future statistical analyses.
- Utilized Mplus to examine phenotypic correlations between social phobia, shyness, and extraversion.
- Tested univariate twin models in Mplus to quantify the genetic and environmental etiology of social phobia in children and adolescents.
- Tested multivariate twin models in Mplus to examine etiological overlap between social phobia, shyness, and extraversion.
- Prepares APA-style manuscript for publication.

August 2017 – May 2019

Research Assistant, Department of Psychology, Emory
University, Atlanta, GA

Responsibilities:

- Assisted Linda Craighead, Ph.D. and doctoral student with dissertation study on self-compassion vs. dissonance-based interventions for body image distress (BID) in young women.
- Conducted informed consent and debriefing procedures with all study participants.
- Ran participants with BID through a series of online psychopathology measures, psychoeducation videos, and letter-writing exercises related to the different interventions.
- Coordinated the sending of seven daily *Qualtrics* © surveys, which monitored participant's daily self-compassion intentions or dissonance-based daily body activism practices.
- Coordinated the sending of 2-week post-intervention *Qualtrics* © surveys, which assessed the efficacy of the assigned intervention of study participants.
- Performed content analysis on participant's dissonance-based and self-compassion interventions letters.

May 2017 – Present

Research Assistant, Department of Psychology, The University of Tampa (UT), Tampa, FL

Responsibilities:

- Worked with Michael Stasio, Ph.D. at The University of Tampa to develop a currently ongoing original study on attentional interference in socially anxious and perfectionistic college-aged individuals.
- Wrote the study application for The University of Tampa's institutional review board (IRB).
- Developed coding schemes in Psytoolkit (internet-based cognitive psychology testing software) that were used for the computer-based study.
- Collaborated with developer of PsyToolkit concerning modification of original codes and experimental tasks to better serve the current study.
- Reviewed and analyzed raw preliminary study data.
- Continuously collaborates with Dr. Stasio in-person and through email concerning study design, implementation, and data collection at The University of Tampa.

August 2016 – May 2019

Research Assistant, Department of Psychology, Emory University, Atlanta, GA

Responsibilities:

- Worked with Dr. Irwin Waldman, Ph.D. on a longitudinal twin study of child and adult psychopathology.
- Performed twin study psychopathology data entry and examination in SPSS.
- Utilized online resources to locate and contact a previously studied sample of twin pairs and requested their participation in a current follow-up study.
- Pilot tested *Qualtrics* © psychopathology surveys for accuracy before they were administered to participants in the follow-up study.
- Worked with R codes to manipulate and load genome-wide association study (GWAS) summary statistics into Genomic SEM, which is a statistical program that analyzes the genetic architecture of complex traits.
- Participated in critical discussions of research articles related to behavior genetics and the latent structure of psychopathology.

Professional Activities:

Editing and Reviewing:

1. Ad Hoc reviewer with Dr. Bilsky in the following journals:
Behavior Therapy
Journal of Psychopathology and Behavioral Assessment

Teaching:

Fall 2019

Graduate Teaching Assistant

Introduction to General Psychology, Undergraduate Course

Instructor: Alex Kuka, M.A.
The University of Mississippi

Responsibilities:

- Held weekly office hours.
- Assisted with exam grading.

Clinical Experience:

July 2020 – Present

Graduate Therapist

Psychological Services Center

University of Mississippi

Supervisors: Sarah Bilsky, Ph.D., Scott Gustafson, Ph.D.

January 2018 – May 2018

Practicum Student

Research Program Clinical Assessment Core

Marcus Autism Center

Atlanta, GA

Responsibilities:

- Observed diagnostic assessments, family interviews, and eye-tracking sessions for infants, toddlers, and children with or at high-risk for autism spectrum disorders (ASD).
- Participated in clinician case conferences and treatment planning.
- Supervised children with ASD and related disabilities during parent feedback sessions.

Departmental Service:

July 2020 – June 2021

Webpage Coordinator

Department of Psychology

The University of Mississippi

Supervisor: Laura Dixon, Ph.D.

Responsibilities:

- Facilitates Psychology Department website updates through WordPress.
- Coordinates with Psychology Department Communication Committee concerning new website information and changes.
- Communicates with current students and faculty for website lab and personnel information.

July 2020 – June 2021

Administrative Assistant to Director of Clinical Training

The University of Mississippi

Supervisor: Todd Smitherman, Ph.D.

Responsibilities:

- Organized First Year Orientation and mentoring of incoming cohort.