

**Adventures in Solitude:**  
**The Link Between Social Isolation and Violent Extremism**

by

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Domestic extremists pose a serious threat to the United States, with recent research suggesting that America is experiencing an upswing in radicalization. The present research explores an important motivational mechanism through which people could become an extremist: social isolation. When socially isolated from others, people are deprived of the certainty of normative structure, the fundamental need to belong, and meaningful social connection. In order to investigate the relationship between social isolation and extremism, we ran two cross-sectional studies with a student population (Study 1; N = 269) and a sample of U.S. residents (Study 2; N = 391). Results from Study 1 suggest that extremism is highest in individuals who spend more time alone and have a smaller social network. Additionally, this relationship is mediated by loneliness. Results from Study 2 suggest that greater loneliness, need to belong, and norm deviation is associated with greater extremism. Additionally, replicating the finding of the first study, the link between social isolation (operationalized as greater time spent alone and smaller social network) and extremism is mediated by loneliness. This research has important implications for understanding motivations that drive extremism and for countering violent extremism. The results of these studies are especially pertinent because people are more isolated now than ever before.

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## 1.0 Introduction

Domestic extremists pose a serious threat to the United States. Research suggests that the U.S. may be experiencing an upswing in radicalization, with 2018 experiencing the greatest number of attacks from extremists since the 1980s (Miller, 2019; Miller & Jensen, 2018; Silva, Duran, Freilich, & Chermak, 2019). The risk of extremism necessitates research on the motivation for why people radicalize and commit violent atrocities. The present research aims to investigate whether social isolation is associated with greater endorsement of violent extremism. People who are socially isolated are more lonely, have a greater need to belong, and operate without the restriction of social norms, and therefore might be freer to endorse extremist attitudes and aggressive behaviors in order to fulfill their social needs. The present research will empirically test this novel hypothesis to better understand factors that contribute to violent extremism.

The Federal Bureau of Investigation defines violent extremism as “Encouraging, condoning, justifying, or supporting the commission of a violent act to achieve political, ideological, religious, social, or economic goals.” Leading scholars have also adopted this definition, including the National Consortium for the Study of Terrorism and Responses to Terrorism (START Center; Global Terrorism Database). Klein and Kruglanski (2013) propose a social psychological definition that focuses on the motivational underpinnings of extremism. They define extremism as fanaticism or “deviation from the norm” (p. 422).

## **1.1 Social Isolation**

People have a fundamental need to form and maintain strong social bonds with close others (Baumeister & Leary, 1995; Bowlby, 1969; Cohen & Wills, 1985). When a person lacks adequate social bonds, they experience social isolation or social disconnectedness, and subsequent negative outcomes. This can occur either (1) when a person lacks interaction with other people (Berg & Cassells, 1992), or (2) when they are disconnected from a social network (Cornwell & Waite, 2009). Research on the effects of isolation often use one or both operationalizations (Nicholson, 2009; Zavaleta, Samuel, & Mills, 2017), and the two ways of measuring the construct are correlated (Brummett, et al., 2001). Individuals who lack social connection are deprived of the benefits that social networks provide, including the ability of relationship partners to help regulate emotions (Lakey & Orehek, 2011), constrain behavior within appropriate social norms (Kopetz & Orehek, 2015), and to aid in the pursuit of socially approved goal pursuit (Fitzsimons, Finkel, & Vandellen, 2015; vanDellen, Shah, Leander, Delose, & Bornstein, 2015). As such, social isolation is a known risk factor of serious outcomes such as morbidity and mortality (Holt-Lunstad, et al., 2015; Pantell et al., 2013; Uchino, 2006), lower well-being (Larson, 1990), cognitive decline (Barnes, et al., 2004; Bassuk, Glass, & Berkman, 1999), and aggression (Zelikowsky et al., 2018).

### **1.1.1 Animal Research**

Social isolation in animals has been studied extensively. Long-term social isolation has been shown to make rats “nervous, aggressive, intractable animal[s]” (Hatch et al., 1965, p. 507). Chronic isolation causes rats to bite and attack both fellow rats and human handlers regardless of environmental context (e.g., light condition and familiarity with conditions; Wongwitdecha &

Marsden, 1996). This result has been termed “isolation syndrome” and is associated with automatic and somatic symptoms, fluctuations in neurotransmitters, and alterations in neural functions (Valzelli, 1973). Researchers suggest that the social isolation stress and aggression association is consistent with evolutionary theories that animals need social bonds (Zelikowsky et al., 2018), and many neural pathways, such as noradrenaline and dopamine, have been shown to be involved in aggressive behavioral outcomes (Modigh, 1973). The negative consequences of social isolation seen in animals might translate to isolation-induced aggression presented by humans (Valzelli, 1973).

### **1.1.2 Solitary Confinement and Sensory Deprivation**

The effects of solitary confinement and sensory deprivation are also relevant for understanding social isolation. Solitary confinement is used as a penal method of control in which inmates experience social isolation nearly all of the time (see Smith, 2006 for a review). Solitary confinement has been shown to not only intensify pre-existing psychological symptoms (Kurki & Morris, 2001), but to also cause externalizing symptoms. The lack of external stimulation creates the inability for individuals to test their perceptions of reality (Haney, 2006) and thus they may act out to test their environment (Arrigo & Bullock, 2008). Grassian (1983) conducted in-depth interviews with individuals who had experienced solitary confinement and found that, among other symptoms, they suffered from disturbances of thought content and problems with impulse control, such as random acts of violence (consistent with Kaba and colleagues’ [2014] finding that solitary confinement increases the likelihood of self-harm among jail inmates). During periods of isolation, inmates reported having aggressive fantasies of “revenge, torture, and mutilation” (Grassian, 1983, p. 1453; Grassian & Friedman, 1986; Haney, 2003). While it has been suggested that negative

symptoms cease once individuals are out of solitary confinement (Grassian, 1983), some individuals continue to experience the hazardous effects of isolation which can impede their ability to rejoin society (Grassian, 2006).

### **1.1.3 Social Isolation Trends**

The influence of social isolation is particularly important because people are more isolated now than ever before. Two decades of research from the General Social Survey (1985 to 2004) shows that Americans reported having a smaller number of companions with whom they can converse about important issues, from an average of 2.94 to 2.08 (McPherson, Smith-Lovin, & Brashears, 2006). Along with this general decrease, a quarter (24.6%) of all Americans surveyed reported having zero close confidants, and 43% reported conversing about meaningful topics with one other or no one. The U.S. Census reports that 27% of Americans live alone, a significant increase when compared to 13% of those in 1960 (Vespa, Lewis, & Kreider, 2013). Research also shows that people are spending less time eating together, with an estimated 46% of meals consumed alone (Hartman Group, 2016). In total, people spend only 39 minutes per day socializing face-to-face (U.S. Department of Labor, 2016). In all, this research supports the notion that social isolation, measured by smaller social networks and more time spent alone, is remarkably increasing. If social isolation is indeed a contributing factor in violent extremism, then population level increases in social isolation would be expected to result in population level increases in violent extremism.

## 1.2 Social Isolation and Extremism

The present research explores what occurs when a person lacks a social network and/or social interaction. Previous research has suggested that individuals who lack social connection or have violent others in their social networks are more violent than individuals who had connections to non-violent others (Jasko, LaFree, & Kruglanski, 2017). Many commentators highlight the role social isolation may play in the development of extremist beliefs (Bhui, Everitt, & Jones, 2014; Everton, 2016; Lyons-Padilla, Gelfand, Mirahmadi, Farooq, & Van Egmond, 2015; Mitts, 2019). Additionally, case studies seem to suggest that violent extremists are socially isolated individuals (Dodd, 2017; Hernandez & Olson, 2019; Hug, 2013). Violent extremists such as Ted Kaczynski (the Unabomber; killed three and injured 23 people during a series of bombings spanning two decades), Timothy McVeigh (killed 168 people in the Oklahoma City bombing in 1995), and Anders Breivik (killed 77 people in Norway during a militant far-right spree) have been described as loners who socially isolated themselves prior to their attacks (Achenbach & Kovaleski, 1996; Michel & Herbeck, 2001; Sezgin & Gisi, 2012). However, little is empirically known about the relationship between actual isolation, size of one's social network, and their extremist beliefs and behavior.

Although researchers (Baruch, Ling, Warnes, & Hofman, 2018) mention that it is important to understand the role of alienation and social distancing from others on violent extremism, to date, little empirical research has been conducted to test this relationship. Due to the increase in people experiencing social isolation and the increase in violent extremist incidents, the relationship between isolation and extremism needs to be investigated. The present research aims to address this gap in the literature and, if support for the hypothesis is found, this work will have implications for the isolation and extremism literatures alike.

### **1.2.1 Current Theories of Radicalization**

Current theories of radicalization are consistent with our current hypothesis. However, they stop short of directly testing it. McCauley and Moskaleiko (2017) conducted a review of the major theories on political extremism and noted that most highlight the role that exclusion or alienation can play in the initial stages of radicalization. Individuals can radicalize at the individual, group, or mass level through mechanisms such as personal or political grievance or trauma, humiliation, or social exclusion (McCauley & Moskaleiko, 2008). Many existing radicalization theories suggest that a deprivation of a fundamental need that is not satisfied leads people to be more susceptible to viewing extreme behavior as an acceptable means to fulfill the deficit (Kruglanski, Jasko, Chernikova, Dugas & Webber, 2017). An emotional vulnerability, or a social need, is a particularly relevant risk factor that underlies many extremism theories (Horgan, 2014). The Staircase to Terrorism theory (Moghaddam, 2005) suggests that as individual's needs are not met, they become increasingly extreme in the types of means they are willing to adopt to satisfy them.

Quest for significance theory (Kruglanski, Chen, Dechesne, Fishman, & Orehek, 2009) suggests that individuals have a need to matter in the eyes of others and when this need is not met, individuals become motivated to seek out significance. The significance quest can be activated when someone experiences significance loss through humiliation, feelings of helplessness, personal failure, or threats to their social identity (Kruglanski et al., 2014; Kruglanski & Orehek, 2011; Orehek & Kruglanski, 2018). Experiencing a loss of significance increases one's need for cognitive closure, which in turn is positively associated with extreme beliefs (Kruglanski & Orehek, 2012; Webber et al., 2018). When experiencing social isolation, people are faced with uncertainty and ambiguity (Hogg, 2007). Uncertainty has been linked to extremism (Hogg, Kruglanski, & van den Bos, 2013), such that being in a state of uncertainty is unpleasant

(McGregor, 2003) and people will go to extreme ends to reduce the ambiguity (Kruglanski & Orehek, 2012; Webber et al., 2018). Thus, extreme beliefs and behaviors might serve as a means to reducing the uncertainty that arises due to social isolation (Klein & Kruglanski, 2013) and may provide individuals a narrative to believe in and a means to gain significance.

A recent line of research has explored the influence of social ostracism—being excluded and rejected—on extremist beliefs and behaviors. This hypothesis fits with the stereotype of extremists as “outcasts” and “rejects.” The experience of being ostracized is painful, even under seemingly minimal conditions (Williams, Cheung, & Choi, 2000) and especially when basic needs are being threatened (Williams, 2009). When people are ostracized, they are more vulnerable to joining any group in order to fulfill their missing social needs, but they are particularly open to extremist groups. Extreme groups are highly entitative, selective, and impactful. Thus, participating in an extreme group may result in needs satisfaction, by reducing uncertainty, fulfilling a sense of belonging, or increasing a sense of control (Hales & Williams, 2018; Williams, Hales, & Michels, 2019). Ostracism has serious negative consequences, including increased aggression (Leary, Twenge, & Quinlivan, 2006) and decreased helping (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Thus, after an experience of ostracism, individuals are particularly susceptible to joining extremist groups and committing violent behavior.

Lone-wolf terrorists—“terrorists who carry out attacks individually and independently from established terrorist organizations” (Spaij, 2010, p. 854)—are an exceptionally vulnerable extremist category because they lack strong social connection and are often described as “loners” (known as a *disconnected-disordered* lone-wolf terrorist; McCauley & Moskalenko, 2014; 2017). These loner offenders have gained increased attention in the extremist literature and are of serious concern due to the increasing number committing violent attacks (Gruenewald, Chermak, &

Freilich, 2013). Lone actors are more likely than other extremists to live alone (Gruenewald et al., 2013), have few friends (Spaij, 2010), and be characterized as socially isolated (52.9% of lone actor terrorists; Gill, Horgan, & Deckert, 2014).



## 2.0 The Present Research

Existing theories of social isolation and radicalization suggest that isolation should cause an increase in violent extremism. Preliminary evidence—gleaned from research on animals, solitary confinement, sensory deprivation, and ostracism—is consistent with the present hypothesis. However, research so far has not directly tested the current hypothesis. The major limitation with previous research is that it did not measure (or manipulate) time spent in social isolation or social network size/density. The present research was designed to test the following hypotheses:

**H1:** Smaller social networks will be associated with higher extremism.

**H2:** More daily time spent alone will be associated with higher extremism.

## 2.1 Mechanisms

### 2.1.1 Loneliness

It is important to differentiate social isolation from perceived isolation, or loneliness, which is the subjective *feeling* of being socially disconnected and lacking social support (Cacioppo et al., 2011; Peplau & Perlman, 1982). While the two constructs are sometimes weakly correlated (Coyle & Dugan, 2012; Perissinotto & Covinsky, 2014), researchers stress the importance of measuring the concepts as unique with potentially different effects (Cornwell & Waite, 2009; Coyle & Dugan, 2012; Holt-Lunstad, et al., 2015; Steptoe, et al., 2013). For example, someone can live alone and

rarely ventures outside their house (high social isolation) yet feel socially connected (low loneliness). Alternatively, a person could live, work, and associate with others frequently (low social isolation) but feel disconnected from those around them (high loneliness). While some lines of research suggest that the perception of isolation has a stronger effect than objective isolation on well-being (Cacioppo & Cacioppo, 2014; Cacioppo, Fowler, & Christakis, 2009), other work suggests that work on isolation needs to measure both constructs and recognize that they are both relevant to potential negative outcomes (Coyle & Dugan, 2012). The present study focuses on the relationship between objective isolation and loneliness, and how both constructs independently and jointly influence violent extremism.

### **2.1.2 Need to Belong**

In the present research it is hypothesized that socially isolated individuals are more prone to extremism than non-isolated individuals. In a seminal paper, Baumeister and Leary (1995) suggest that people have a vital need to belong and maintain strong social ties with others. A way to ensure that one's need to belong is fulfilled is to have recurrent positive interactions with others. Experiencing a state of separation when spending time alone, people may feel as though they do not belong, which in turn can have serious negative implications for well-being. When people do not feel a sense of belonging, they may respond with anger and aggression (Leary, Twenge, & Quinlivan, 2006) or resort to violence (Qutaiba & Tamie, 2010). Thus, this research assesses the link between need to belong and violent extremism.

### 2.1.3 Normative Structure

According to the current perspective, a person who is socially isolated should be more willing to deviate from social norms, including the commission of a violent act as a means to accomplish their goals. People use the behavior of those around them to help infer what behavior is acceptable in a given situation, known as descriptive norms (Rivis & Sheeran, 2003). This phenomenon occurs even when the normative behavior is arbitrary (Pryor, Perfors, & Howe, 2019). When socially isolated from others, people lack the structure that the barriers of social norms provide (Gelfand, 2018). They can do and think whatever they want because no one is there to judge their non-normative behavior and thoughts. When lacking connection to others, people begin believing and acting non-normatively, and without the exposure to others' viewpoints and behavior as a reference, they become more entrenched in their norm violation. Gelfand (2012) suggests that "tight" societies are those that strictly adhere to social norms and people limit their behavior to be in line with norms in order to avoid negative evaluation from others and possible consequences of norm deviance (Gelfand et al., 2011). Tight situations are negatively associated with creativity and openness (Harrington & Gelfand, 2014). Loose environments, on the other hand, have less strict social rules and allow people to behave unrestrained from norms. The present research will investigate whether social isolation is a loose situation in which people are not controlled by norms, which allows for them to deviate from normative beliefs and behaviors (i.e. extremism).

## **2.2 Study 1: Student Sample**

The first study served as an initial investigation exploring the effects of one's social network and time spent alone on extremist beliefs and aggression. It was hypothesized that greater social isolation would be associated with greater extremism and aggression.

### **2.2.1 Participants**

Two hundred ninety-three participants were recruited from an American university subject pool to participate in the study for Introductory Psychology course credit. Twenty-four participants were excluded from data analysis due to incomplete data. All of the remaining 269 participants (61.0% female) were in the 18 to 24-years-old age range. The sample was predominately white (70.3%), followed by 21.9% Asian, 8.6% black, 3.7% Hispanic, 0.4% Pacific Islander, and 1.1% reported another race/ethnicity. Our sample size was determined by considering the sample size at which effect correlation efficient tend to stabilize (Schönbrodt& Perugini, 2013). Such a consideration suggests a sample size of 250. Thus, we aimed for 300 participants (or the most we could recruit in a single semester). That way, if we fell slightly short of or target or had to exclude some participants, we would remain above the threshold of 250 participants. Our final sample size yielded power between 95.84% and 99.99%.

### **2.2.2 Materials and Procedure**

Participants completed all materials in a private laboratory room during the course of a one-hour session. Measures were categorized into an extremism or social isolation block. The two

blocks were randomly presented to participants and the measures within each block were randomized.

### **2.2.2.1 Social Network Size**

Participants completed the Social Network Index (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997) as a measure of social network size. Participants reported the presence of 12 types of social relationships in their life. Example relationships include a spouse, friends, and close neighbors. Social network size was determined by the total number of individuals with whom the participant has consistent contact, including individuals in each social role and group members of groups the participant is a member. Greater scores indicate larger social networks.

### **2.2.2.2 Time Spent Alone**

Participants completed a modified version of the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) as a recall measure of daily time spent alone. Participants were asked to report details of their previous day. First, they reported the day of the week they are reporting on and the time in which they woke up and went to sleep. Participants were given a paper with 10 “episodes” each for the morning, afternoon, and evening. For each episode, participants made notes about the experience using the following directions:

“On the paper provided, please describe your day, yesterday. Think of your day as a continuous series of scenes or episodes in a film. Give each episode a brief name that will help you remember it... Write down the approximate times at which each episode began and ended... Indications of the end of an episode might be going to a different location, ending one activity and starting another, or a change

in the people you are interacting with...Try to remember each episode in detail and write a few words that will remind you of exactly what was going on.”

Participants were given 10 minutes to complete the diary. Next, participants answered questions about each episode they experienced. Most questions are not reported in the present study. The item of note was whether they were interacting with anyone during the episode (interacting includes phone-calling or video-calling, but not texting or messaging, as the former requires immediate feedback from another person). Daily time spent alone was calculated as the percent of the total number of episodes that were spent alone. Greater scores indicate a higher percentage of episodes experienced alone.

### **2.2.2.3 Loneliness**

Subjective feelings of loneliness were measured using the UCLA Loneliness Scale (Russell, 1996). Participants rated 20 items on a four-point Likert scale (1 = *Never*; 4 = *Often*). Example items include, “How often do you feel that you lack companionship” and “How often do you feel that people are around you but not with you.” Greater scores averaged across the 20 items ( $\alpha = .94$ ) indicate greater loneliness.

### **2.2.2.4 Problematic Internet Use**

In recent years, increases in online communication has begun to replace meaningful face-to-face interaction (Kushlev, Proulx, & Dunn, 2017). Facilitated by the increase in invention and accessibility of technologies that allow for computer-mediated communication, people are spending more time interacting with a screen than with other people (Twenge, Spitzburg, & Campbell, 2019). Online radicalization has become of increased concern (Homeland Security, 2019). People can exclusively engage with extremist material via the internet and devote a

significant amount of time and energy to this content (Neumann, 2013). The constant exposure to online extremist information can normalize deviant beliefs and violent behaviors, making people more susceptible to radicalizing. Thus, to control for participants' reliance on online content, they completed the Generalized Problematic Internet Use Scale 2 (Caplan, 2010) to measure problematic internet use. Participants responded to 15 items on an eight-point Likert scale (1 = *Definitely disagree*; 8 = *Definitely agree*). Example items include, "I prefer online social interaction over face-to-face communication" and "I think obsessively about going online when I am offline." Greater scores averaged across the 15 items ( $\alpha = .88$ ) indicate greater problematic internet use.

#### **2.2.2.5 Extremism**

Extremism was measured using the Extremism Scale (Ozer & Bertelsen, 2018). Participants completed 14 items on a seven-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*). Example items include, "It is a waste of time to try to find common solutions with those whose thoughts about life are completely different than ours" and "There is only one way to live the good and correct life." Greater scores averaged across the 14 items ( $\alpha = .87$ ) indicate greater extremism.

#### **2.2.2.6 Aggression**

Participants completed the Aggression Questionnaire (Buss & Perry, 1992) to measure aggression. The measure consisted of 29 items on a seven-point Likert scale (1 = *Extremely uncharacteristic of me*; 7 = *Extremely characteristic of me*). Example items include, "Given enough provocation, I may hit another person" and "I have trouble controlling my temper." Greater scores averaged across the 29 items ( $\alpha = .90$ ) indicate greater aggression.

### 2.2.3 Results and Discussion

Descriptive and correlational statistics are presented in Table 1. A Kolmogorov-Smirnov test of normality was run on time spent alone. The alone scores,  $D(269) = .197, p < .001$ , were significantly non-normal. However, normality transformations (i.e. log transformation) did not make the variable normally distributed. Thus, all models are run on the untransformed time spent alone data. Regression analyses were used to investigate the relationship between social isolation and extremism and aggression (Tables 2 and 3). Results indicate that time spent alone ( $b = .00$ , 95% CI [-.003, .004],  $p = .75$ ) and loneliness ( $b = .26$ , 95% CI [.060, .462],  $p = .011$ )—when controlling for sex, race, religiosity, religious importance, political orientation, political orientation importance, problematic internet use—explained 10.60% of the variance ( $R^2 = .11$ ,  $F(14, 254) = 3.28, p < .001$ ) in extremism. Additionally, time spent alone ( $b = -.00$ , 95% CI [-.004, .002],  $p = .51$ ) and loneliness ( $b = .40$ , 95% CI [.210, .591],  $p < .001$ )—when controlling for sex, race, religiosity, religious importance, political orientation, political orientation importance, problematic internet use—explained 17.50% of the variance ( $R^2 = .18$ ,  $F(14, 254) = 5.07, p < .001$ ) in aggression.

Results indicate that social network size ( $b = .00$ , 95% CI [-.006, .006],  $p = .97$ ) and loneliness ( $b = .27$ , 95% CI [.068, .467],  $p = .009$ )—when controlling for sex, race, religiosity, religious importance, political orientation, political orientation importance, problematic internet use—explained 10.60% of the variance ( $R^2 = .11$ ,  $F(14, 254) = 3.27, p < .001$ ) in extremism. Additionally, social network size ( $b = .001$ , 95% CI [-.005, .007],  $p = .79$ ) and loneliness ( $b = .39$ , 95% CI [.202, .580],  $p < .001$ )—when controlling for sex, race, religiosity, religious importance, political orientation, political orientation importance, problematic internet use—explained 17.40% of the variance ( $R^2 = .17$ ,  $F(14, 254) = 5.04, p < .001$ ) in aggression.



Next, a mediation analysis was used to further explore the link between isolation and extremism through a specific path (via loneliness). Because a direct effect of loneliness on extremism and aggression was found, mediation analyses were used regardless of the lack of a direct effect of isolation on the outcome variables (see Collins, Graham, & Flaherty, 1998; Shrout & Bolger, 2002). To test whether loneliness mediates the effect of isolation on extremism and aggression, mediation analyses were run using the PROCESS macro using 10,000 samples bootstrap estimation for calculating effects (Hayes, 2017). Results indicate that time spent alone significantly predicts loneliness (*a*-path; Tables 4 and 5),  $b = .0038$ , 95% CI [.0018, .0059],  $t(269) = 3.66$ ,  $p = .0003$ . Additionally, loneliness was a significant predictor of extremism (*b*-path),  $b = .2611$ , 95% CI [.0600, .4623],  $t(269) = 2.56$ ,  $p = .011$ , and aggression (*b*-path),  $b = .4006$ , 95% CI [.2103, .5908],  $t(269) = 4.15$ ,  $p < .001$ . There was a significant indirect effect of time spent alone on extremism through loneliness,  $b = .0010$ , 95% CI [.0001, .0023]. There was also a significant indirect effect of time spent alone on aggression through loneliness,  $b = .0015$ , 95% CI [.0005, .0027].

Results indicate that social network size significantly predicts loneliness (*a*-path; Tables 6 and 7),  $b = -.0059$ , 95% CI [-.0097, -.0022],  $t(269) = -3.11$ ,  $p = .0021$ . Additionally, loneliness was a significant predictor of extremism (*b*-path),  $b = .2677$ , 95% CI [.0679, .4674],  $t(269) = 2.64$ ,  $p = .009$ , and aggression (*b*-path),  $b = .3913$ , 95% CI [.2022, .5803],  $t(269) = 4.08$ ,  $p = .0001$ . There was a significant indirect effect of social network size on extremism through loneliness,  $b = -.0016$ , 95% CI [-.0041, -.0002]. There was also a significant indirect effect of social network size on aggression through loneliness,  $b = -.0023$ , 95% CI [-.0047, -.0008].

### 2.3 Study 2: Online Sample

Study 2 served as a follow-up study to the first sample and had three key benefits. First, Study 2 functioned as a replication of the results from Study 1. Due to the exploratory nature of the models found in the first study, additional support increases confidence in the findings. Additionally, improvements were made on the materials used to measure time spent alone. Lastly, Study 1 utilized a student sample which, while convenient, has limitations. As can be seen, there is little variability in extreme beliefs within a student population. Thus, the external validity of the statistical models was strengthened by collecting data from an online sample of United States residents.

Due to the non-normality of the time spent alone variable from the Day Reconstruction Measure used in Study 1, improvements were made in Study 2 on how time spent alone was operationalized. Study 2 used a measure in which participants reported their time spent alone and with other people from the previous seven days. The benefit of the present measure over the previously used one is that it allowed us to calculate the percentage of time a participant spends in isolation on average because they reported on daily activity from multiple days. The previous measure allowed participants to report on isolation from only one day, which might have been abnormal in terms of their usual routine. By recording time spent alone from multiple days, we hoped to gain better insight to the amount of time the participant *usually* spends alone. Additionally, there is more variability in time spent alone if it is recorded for multiple days.

Study 2 addresses the limitations present in Study 1. To do this, we investigated whether smaller social networks and more time spent alone is associated with greater extremism and aggression. Additionally, we examined the role of potential mechanisms—loneliness, need to

belong, and norm deviation—in this relationship. This study employs a cross-sectional design. The specific hypotheses for Study 2 include:

**H1:** A smaller social network size and greater time spent alone will be associated with greater extremism and aggression.

**H2a:** The association between time spent alone and extremism will be mediated by loneliness, need to belong, and norm deviation, such that more time spent alone will be associated with greater loneliness, greater need to belong, and greater norm deviation, which will then be associated with greater extremism.

**H2b:** The association between time spent alone and aggression will be mediated by loneliness, need to belong, and norm deviation, such that more time spent alone will be associated with greater loneliness, greater need to belong, and greater norm deviation, which will then be associated with greater aggression.

**H3a:** The association between social network size and extremism will be mediated by loneliness, need to belong, and norm deviation such that smaller network size will be associated with greater loneliness, greater need to belong, and greater norm deviation, which will then be associated with greater extremism.

**H3b:** The association between social network size and aggression will be mediated by loneliness, need to belong, and norm deviation, such that smaller network size will be associated with greater loneliness, greater need to belong, and greater norm deviation, which will then be associated with greater aggression.

Results supporting these hypotheses would have important implications for our understanding of the negative outcomes of time alone and having small social networks.

Additionally, such results would have implications for radicalization research, specifically suggesting a unique pathway through which some individuals may adopt extreme attitudes.

### **2.3.1 Participants**

To further explore the relationship between social isolation and extremism, 400 participants living in the United States were recruited from Prolific.ac to complete a cross sectional correlational study. One participant was excluded from data analysis due to incomplete data and an additional eight participants were excluded for failing an attention check item. Of the remaining 391 participants (50.9% female), 17.9% were 18-24 years old, 41.4% were 25-34 years old, 21.0% were 35-44 years old, 9.2% were 45-54 years old, 8.2% were 55-64 years old, and 2.3% were 65 years or older. Participants identified as white (74.9%), Asian (7.7%), Hispanic (6.4%), black (4.6%), Native American (0.3%), and multiracial or another race (6.1%). Participants were paid \$2.00 for their participation. The average completion time for the survey was 17.48 minutes, which indicates an average payment of \$6.86 per hour.

#### **2.3.1.1 Power Analysis**

A sample size of 400 participants was determined due to the consideration of resources for the present sample. A statistical power analysis was run using G\*Power 3.1.9.4 (Faul, Erdfelder, Lang, & Buchner, 2007) for all planned analyses. A sensitivity power analysis for all multiple regressions was conducted using a 0.05 alpha-level and with 90% power. It was determined that a total sample size of 400 participants would yield an ability to detect a small effect size ( $f = 0.03$ ; Cohen, 1992).

## **2.3.2 Materials and Procedure**

All participants completed the survey online. Participants completed each of the measures listed below, which were presented within three blocks and the blocks were presented in random order. The extremism measures (Extremism Scale and Aggression Questionnaire) were grouped together and presented in random order, the social isolation measures (Social Network Index and Timeline Followback) were grouped together and presented in random order, and the mechanism measures (UCLA Loneliness Scale, single-item need to belong scale, and norm deviation measure) were grouped together and presented in random order.

### **2.3.2.1 Social Network Size**

Participants completed the same measure of social network size as in Study 1.

### **2.3.2.2 Time Alone**

Participants completed a modified version of the Timeline Followback (Sobell & Sobell, 1995) as a measure of time spent alone. Participants reported the total number of hours they spent awake during the previous seven days, and the number of those hours on each day that they spent with other people and alone. Isolation was calculated as the percent of time spent alone, which is equal to the total number of hours spent alone during the previous seven days divided by the total number of hours spent awake during that time period. Greater scores indicate more time spent alone.

### **2.3.2.3 Loneliness**

Feelings of loneliness were measured using the same scale as Study 1 ( $\alpha = .95$ ).

#### **2.3.2.4 Extremism**

Extremist beliefs were measured using the same scale as Study 1 ( $\alpha = .87$ ).

#### **2.3.2.5 Aggression**

Participants completed the same measure of aggression as in Study 1 ( $\alpha = .92$ ).

#### **2.3.2.6 Need to Belong**

Participants completed the single item need to belong scale (Nichols & Webster, 2013) to measure the need to belong. Participants rated one question on a 100-point sliding scale (1 = *Strongly disagree*; 100 = *Strongly agree*). The item is, “I have a strong need to belong.” Greater scores indicate greater need to belong.

#### **2.3.2.7 Norm Deviation**

Norm deviation was measured using behavior by situation matrices originally created by Price and Bouffard (1974) and adapted by Gelfand and colleagues (2011). Participants rated the appropriateness of each of 12 behaviors in 4 situations (48 total combinations) on a six-point Likert scale (1 = *Extremely inappropriate*; 6 = *Extremely appropriate*). Participants were presented with the following situations: Job interview, classroom, funeral, and doctor’s office. The behaviors that participants rated include: Eat, talk, curse/swear, laugh out loud, flirt, argue, listen to music, cry, read newspaper, sing, kiss, and bargain. A deviation score was calculated for each participant for each situation by taking the absolute value of the standardized difference between their score for the situation and the sample average for that situation. Norm deviation was calculated by averaging across each participant’s 48 deviation scores. Greater scores indicate greater deviation from the norm across behaviors and situations.

### 2.3.3 Results and Discussion

Descriptive and correlational statistics are presented in Table 8. Linear regression analyses were again used to explore the relationship between social isolation and extremism and aggression (Tables 9 and 10). Results indicate that time spent alone ( $b = -.02$ , 95% CI [-.317, .283],  $p = .91$ ), loneliness ( $b = .37$ , 95% CI [.229, .516],  $p < .001$ ), need to belong ( $b = .004$ , 95% CI [.001, .007],  $p = .02$ ), and norm deviation ( $b = .87$ , 95% CI [.466, 1.277],  $p < .001$ )—when controlling for age, sex, education, race, religiosity, religious importance, political orientation, and income—explain 26.40% of the variance ( $R^2 = .26$ ,  $F(16, 374) = 9.74$ ,  $p < .001$ ) in extremism. Additionally, time spent alone ( $b = -.12$ , 95% CI [-.430, .193],  $p = .46$ ), loneliness ( $b = .62$ , 95% CI [.472, .770],  $p < .001$ ), need to belong ( $b = .003$ , 95% CI [-.001, .006],  $p = .10$ ), and norm deviation ( $b = 1.03$ , 95% CI [.607, 1.450],  $p < .001$ )—when controlling for age, sex, education, race, religiosity, religious importance, political orientation, and income—explain 25.80% of the variance ( $R^2 = .26$ ,  $F(16, 374) = 9.46$ ,  $p < .001$ ) in aggression.

Results indicate that social network size ( $b = -.002$ , 95% CI [-.008, .005],  $p = .65$ ), loneliness ( $b = .36$ , 95% CI [.216, .507],  $p < .001$ ), need to belong ( $b = .004$ , 95% CI [.001, .007],  $p = .01$ ), and norm deviation ( $b = .87$ , 95% CI [.466, 1.276],  $p < .001$ )—when controlling for age, sex, education, race, religiosity, religious importance, political orientation, and income—explain 26.40% of the variance ( $R^2 = .26$ ,  $F(16, 374) = 9.76$ ,  $p < .001$ ) in extremism. Additionally, social network size ( $b = .002$ , 95% CI [-.005, .009],  $p = .67$ ), loneliness ( $b = .62$ , 95% CI [.466, .768],  $p < .001$ ), need to belong ( $b = .003$ , 95% CI [-.001, .006],  $p = .10$ ), and norm deviation ( $b = 1.03$ , 95% CI [.608, 1.450],  $p < .001$ )—when controlling for age, sex, education, race, religiosity, religious importance, political orientation, and income—explain 25.70% of the variance ( $R^2 = .26$ ,  $F(16, 374) = 9.43$ ,  $p < .001$ ) in aggression.

Mediation analyses were run to test loneliness, need to belong, and norm deviation as mechanisms for the association between social network size and time spent alone on extremism and aggression. Results indicate that time spent alone significantly predicts loneliness (*a*-path; Tables 11 and 12),  $b = .48$ , 95% CI [.270, .682],  $p < .001$ . Additionally, loneliness was a significant predictor of extremism (*b*-path),  $b = .35$ , 95% CI [.200, .496],  $p < .001$ , and aggression (*b*-path),  $b = .60$ , 95% CI [.445, .753],  $p < .001$ . There was a significant indirect effect of time spent alone on extremism through loneliness,  $b = .17$ , 95% CI [.074, .276]. There was also a significant indirect effect of time spent alone on aggression through loneliness,  $b = .29$ , 95% CI [.141, .445].

Results indicate that time spent alone significantly predicts need to belong (*a*-path; Tables 13 and 14),  $b = -11.69$ , 95% CI [-21.01, -2.36],  $p = .01$ . Additionally, need to belong was a significant predictor of extremism (*b*-path),  $b = .00$ , 95% CI [.001, .007],  $p = .02$ , but not aggression (*b*-path),  $b = .00$ , 95% CI [-.001, .006],  $p = .20$ . There was not a significant indirect effect of time spent alone on extremism,  $b = -.05$ , 95% CI [-.115, .0001], or aggression,  $b = -.03$ , 95% CI [-.090, .019], through need to belong.

Results indicate that time spent alone did not significantly predict norm deviation (*a*-path; Tables 15 and 16),  $b = -.01$ , 95% CI [-.086, .060],  $p = .73$ . However, norm deviation was a significant predictor of extremism (*b*-path),  $b = .89$ , 95% CI [.471, 1.31],  $p < .001$ , and aggression (*b*-path),  $b = 1.01$ , 95% CI [.555, 1.464],  $p < .001$ . There was not a significant indirect effect of time spent alone on extremism,  $b = -.01$ , 95% CI [-.080, .071], or aggression,  $b = -.01$ , 95% CI [-.100, .073], through norm deviation.

Results indicate that social network size significantly predicts loneliness (*a*-path; Tables 17 and 18),  $b = -.01$ , 95% CI [-.017, -.008],  $p < .001$ . Additionally, loneliness was a significant predictor of extremism (*b*-path),  $b = .34$ , 95% CI [.189, .488],  $p < .001$ , and aggression (*b*-path),  $b$



= .60, 95% CI [.441, .752],  $p < .001$ . There was a significant indirect effect of social network size on extremism through loneliness,  $b = -.004$ , 95% CI [-.007, -.002]. There was also a significant indirect effect of social network size on aggression through loneliness,  $b = -.01$ , 95% CI [-.012, -.005].

Results indicate that social network size significantly predicts need to belong (*a*-path; Tables 19 and 20),  $b = .31$ , 95% CI [.103, .513],  $p = .003$ . Additionally, need to belong was a significant predictor of extremism (*b*-path),  $b = .004$ , 95% CI [.001, .007],  $p = .02$ , but not aggression (*b*-path),  $b = .003$ , 95% CI [-.001, .006],  $p = .16$ . There was a significant indirect effect of social network size on extremism through need to belong,  $b = .001$ , 95% CI [.0002, .003]. There was not a significant indirect effect of social network size on aggression through need to belong,  $b = .001$ , 95% CI [-.0003, .002].

Results indicate that social network size does not significantly predict norm deviation (*a*-path; Tables 21 and 22),  $b = .00$ , 95% CI [-.001, .002],  $p = .75$ . However, norm deviation was a significant predictor of extremism (*b*-path),  $b = .89$ , 95% CI [.474, 1.308],  $p < .001$ , and aggression (*b*-path),  $b = 1.01$ , 95% CI [.558, 1.46],  $p < .001$ . Additionally, there was not a significant indirect effect of social network size on extremism,  $b = .00$ , 95% CI [-.001, .002], or aggression,  $b = .00$ , 95% CI [-.001, .002], through norm deviation.

### **3.0 General Discussion**

The present research explored a possible factor in radicalization by testing a novel hypothesis of the effect of social isolation on violent extremism. Study 1 showed that loneliness was associated with greater aggression and extremist beliefs. Additionally, the indirect effect of social isolation (spending more time alone and having a smaller social network) on aggression and extremist beliefs was mediated by greater loneliness. Study 2 replicated the link between loneliness, extremism, and aggression. It also found that the need to belong was associated with greater extremism, and that norm deviation was associated with greater extremism and aggression.

#### **3.1 Strengths and Implications**

The present research had several key strengths. First, it used two samples to explore the association between isolation and extremism. Study 2 used a sample of U.S. residents, which not only consisted of more diverse demographics, but allows us to generalize the findings to a broader population. This is important due to the concerns about increased domestic radicalization within the United States (Miller, 2019). Additionally, time spent alone was measured using two different instruments. Finding consistent results across studies allows for increased confidence in the findings, particularly the results involving loneliness.

In both studies, loneliness was a significant predictor of extremism and aggression. One's perception of lacking connection to other people seems to be particularly important for viewing extreme behavior as an acceptable means to fulfilling their social needs. Loneliness is a risk factor

for physical (Hawkley & Cacioppo, 2010) and mental (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006) health disorders. The present research suggests it may also be a risk factor for extremism and aggression. While this research focused on the effects of time spent alone and social network size on loneliness, there are many other factors contributing to the experience of loneliness (Cacioppo & Patrick, 2008). These additional variables should be further investigated, as they may be serving as a catalyst for violent extremism. Existing interventions designed to strengthen meaningful connection and decrease loneliness may be influential to deradicalization efforts.

The present research adds to our understanding of the association between actual and perceived isolation. While past literature recognizes that the two constructs are unique (Havens, Hall, Sylvestre, & Jivan, 2004), debate still exists about the link between them and how best to operationally define the constructs (Matthews et al., 2016; Zavaleta, Samuel, & Mills, 2017). Significant correlations between actual isolation—operationalized as time spent alone and social network size—and loneliness were found in both Study 1 and 2. Additionally, using mediation analyses, we found that isolation consistently predicted loneliness, which in turn was associated with the negative outcomes of extremism and aggression. This suggests that actual and perceived isolation may be jointly influential in the negative outcomes of both constructs.

We are currently experiencing a social isolation epidemic (Konrath, 2018) and leading researchers have described loneliness as a public health crisis (Cacioppo & Cacioppo, 2018). While past research has studied the negative implications of isolation in specific populations (e.g. individuals who experience solitary confinement) and the effects of need deprivation on mental and physical health, it is imperative that social science research continues to understand the negative relational outcomes of actual and perceived isolation, such as violent extremism.

Additionally, a major strength of Study 2 was that it was conducted during the global COVID-19 pandemic. During this time, people are being asked to willingly self-isolate as a preventative measure to slow the spread of the virus to other people. Past research suggests that after the stressful experience of a crisis, such as a natural or manmade disaster, people tend to increase affiliative behavior (Cohn, Mehl, & Pennebaker, 2004; Mehl & Pennebaker, 2003). However, in the present stressful situation, people are unable to cope through face-to-face interaction.<sup>1</sup> Thus, this research can help understand a possible negative outcome of the social isolation and social distancing that is being experienced en masse.

In line with previous work, the present research found that when one is being deprived of a fundamental need—to belong, have meaningful interactions, and have understandable normative structure—they are more susceptible to radical beliefs and behavior. These studies began to explore a unique pathway through which people might radicalize—spending time alone and having a small social network. These findings have exciting implications on countering violent extremism and de-radicalization interventions. Such work has already begun. Webber and colleagues (2018) conducted research on the Sri Lankan rehabilitation program with former Tamil Tigers and found that when personal significance was fulfilled and individuals interacted with one another, they reported lower extremism than individuals who did not receive the intervention. With current technology, we can monitor if at-risk groups are not experiencing meaningful social connections with other people or are spending an increased amount of time alone, and intervene at critical moments.

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<sup>1</sup> This discussion was written in March 2020, during the potential upswing of the COVID-19 pandemic in the United States.

### 3.2 Limitations and Future Directions

A limitation of the present research is that both studies are correlational. While we were able to find an association between loneliness, need to belong, norm deviation, extremism, and aggression, we are unable to determine the causal direction of these variables. It may be the case that social isolation serves as a catalyst for violent extremism. However, isolation may be part of a recursive process in which isolation leads to extremism and extremism leads to isolation. Because extremists' beliefs and behaviors are non-normative, they may willingly isolate from mainstream society to protect themselves from rejection, or isolate non-willingly as a result of rejection. Recent research suggests that extreme individuals are more likely to be rejected than non-extreme individuals (Hales & Williams, in press). A similar process may be occurring with isolation, need deprivation, and violent extremism. Future research should experimentally manipulate need deprivation to determine if people who experience high loneliness, need to belong, and norm deviation report greater extremism and aggression than individuals who experience low loneliness, need to belong, and norm deviation.

The present studies did not find support for the direct effect of isolation on extremism and aggression. This finding may be the result of hidden moderators that were not tested. Individual differences, such as extroversion or rejection sensitivity, may influence the effect of social isolation on negative outcomes. Additionally, social isolation may have a differing effect depending on if the participant willingly chose to spend time alone or if it forced upon them. People may choose to spend time in solitude because of desired positive outcomes, such as enhanced creativity and spirituality (Long & Averill, 2003). In turn, the negative consequences of isolation might not be as significant because these individuals are not being deprived of their social needs. However, if isolation was forced upon someone, such as through solitary confinement during

incarceration, their social needs may not be met, and thus negative consequences would likely arise.

Additionally, time spent alone is a difficult construct to measure with self-report instruments, as participants may experience complications recalling previous days. Future research should experimentally manipulate time spent alone in order to further investigate this hypothesis. Additionally, researchers could follow participants over time, or use momentary assessments of isolation, to better measure the amount of time people spend alone and the subsequent negative implications of how they spend their time.

The present research only conducted pre-registered main effect and simple mediation models. Future analyses should further explore the relationship between isolation and extremism. For example, analyses can be conducted using social isolation as a moderator. Isolation may enhance the effects of loneliness, need to belong, and norm deviation on extremism and aggression, such that the effects of need deprivation are greater for individuals who spend more time alone or have a small social network.

Lastly, the present studies used self-report measures for extremism and aggression. Future research should investigate if the present findings replicate using behavioral measures of extremism and aggression. Additionally, to further our understanding of the real-world applicability of the present findings, future work could explore the effects of isolation and need deprivation within existing extremist groups. Sampling a particular extremist group would allow researchers to tailor extremism measures to be ideologically specific. Studying the negative implications of isolation using relevant measures of violent outcomes would increase the ecological validity of the findings.

### **3.3 Conclusion**

Violent extremist attacks are a serious threat to the United States. In order to curb the increasing trajectory of the number of people radicalizing, we need to investigate possible motives that make people open to extreme beliefs. In line with past work, the present research found that lacking a fundamental need—meaningful social connection and normative structure—is associated with violent extremism. Additionally, it began to explore the role actual isolation can play in the development of extreme beliefs and aggression. a.

## Appendix A Tables

**Table 1 Bivariate Correlations and Descriptive Statistics**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1 Time Alone	1.00	-.12*	.19**	.10	.00	-.08	.01	.05	-.07	-.01	-.16**	-.13*	.01	-.07	-.03	.06	.04	
2 Network Size		1.00	-.23***	-.00	.15**	.14*	-.15*	.01	.17**	-.04	.10	.19**	-.02	.15***	-.04	-.10	-.06	
3 Loneliness			1.00	-.13*	-.22***	.05	.18**	-.02	-.04	.12*	-.15*	-.06	-.12*	.04	.36***	.26***	.34***	
4 Sex				1.00	.04	-.03	-.03	-.04	-.05	-.10	-.06	-.02	.25***	-.10	-.07	-.00	.09	
5 Race (White)					1.00	-.30***	-.75***	-.03	-.09	-.18**	.06	-.02	.05	.08	-.03	-.33***	-.17**	
6 Race (Black)						1.00	-.13*	.01	-.02	-.03	.08	.15*	-.13*	.09	-.04	.09	.03	
7 Race (Asian)							1.00	-.06	.11	.01	-.15*	-.10	-.00	-.09	.09	.28***	.18**	
8 Race (Hispanic)								1.00	-.01	-.02	-.03	.01	.03	-.01	-.08	-.05	.06	
9 Race (Pacific Islander)									1.00	-.01	.04	.03	.03	-.05	-.03	.02	.05	
10 Race (Other)										1.00	.01	-.04	-.11	.06	.03	.06	.06	
11 Religiosity											1.00	.52***	.23**	-.15*	-.06	-.04	-.09	
12 Religious Importance												1.00	.29***	.06	-.02	.01	-.02	
13 Political Orientation													1.00	-.25***	-.14*	.06	.05	
14 Political Importance														1.00	.14*	-.03	.12*	
15 Problematic Internet Use															1.00	.11	.30***	
16 Extremism																1.00	.35***	
17 Aggression																	1.00	
<i>M<sub>ean</sub></i>		37.66	25.68	2.10	.40	.70	.08	.23	.04	.00	.01	.70	2.50	2.61	2.76	3.37	2.43	2.87
<i>SD</i>		30.23	17.07	.55	.51	.46	.27	.42	.19	.06	.12	.46	1.19	.90	.99	1.18	.86	.86

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



Table 2 Main Effects of Time Alone and Social Network Size on Extremism

Variable	Time Alone	Social Network Size
	b (SE)	b (SE)
Constant	1.60 (.43)***	1.62 (.42)***
Time Alone	.00 (.00)	—
Social Network Size	—	.00 (.00)
Loneliness	.26 (.10)*	.27 (.10)**
Sex	.00 (.10)	.01 (.10)
Race (White)	-.26 (.24)	-.27 (.24)
Race (Black)	.28 (.25)	.27 (.25)
Race (Asian)	.29 (.25)	.28 (.25)
Race (Hispanic)	-.14 (.27)	-.14 (.27)
Race (Pacific Islander)	.09 (.82)	.08 (.84)
Race (Other)	.36 (.51)	.34 (.50)
Religiosity	-.05 (.14)	-.06 (.14)
Religion Importance	-.01 (.05)	-.02 (.06)
Political Orientation	.12 (.06)	.12 (.06)
Political Importance	-.01 (.06)	-.01 (.06)
Problematic Internet Use	.04 (.05)	.04 (.05)
$R^2$	.11	.11
$F(14, 254)$	3.28***	3.27***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 3 Main Effects of Time Alone and Social Network Size on Aggression

Variable	Time Alone	Social Network Size
	b (SE)	b (SE)
Constant	.76 (.40)	.71 (.40)
Time Alone	-.00 (.00)	—
Social Network Size	—	.00 (.00)
Loneliness	.40 (.10)***	.39 (.10)***
Sex	.22 (.10)*	.21 (.10)*
Race (White)	.03 (.23)	.03 (.23)
Race (Black)	.17 (.24)	.18 (.24)
Race (Asian)	.23 (.23)	.23 (.23)
Race (Hispanic)	.46 (.25)	.45 (.25)
Race (Pacific Islander)	.93 (.78)	.93 (.79)
Race (Other)	-.07 (.48)	-.04 (.48)
Religiosity	-.14 (.13)	-.13 (.13)
Religion Importance	.01 (.05)	.01 (.05)
Political Orientation	.13 (.06)*	.13 (.06)*
Political Importance	.13 (.05)*	.13 (.05)*
Problematic Internet Use	.14 (.04)**	.15 (.04)**
$R^2$	.18	.17
$F(14, 254)$	5.07***	5.04***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4 Mediation Analysis of Time Alone and Loneliness on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	1.78 (.24)***	1.60 (.43)***
Time Alone	.00 (.00)***	.00 (.00)
Loneliness	—	.26 (.10)*
Sex	-.13 (.06)*	.00 (.10)
Race (White)	-.26 (.15)	-.26 (.24)
Race (Black)	.04 (.15)	.28 (.25)
Race (Asian)	-.06 (.15)	.29 (.25)
Race (Hispanic)	-.05 (.16)	-.14 (.27)
Race (Pacific Islander)	-.32 (.50)	.09 (.82)
Race (Other)	.28 (.31)	.36 (.51)
Religiosity	-.13 (.08)	-.05 (.14)
Religion Importance	.00 (.03)	-.01 (.05)
Political Orientation	-.00 (.04)	.12 (.06)
Political Importance	-.00 (.03)	-.01 (.06)
Problematic Internet Use	.15 (.03)***	.04 (.05)
$R^2$	.23	.15
$F(14, 254)$	6.02***	3.27***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5 Mediation Analysis of Time Alone and Loneliness on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	1.78 (.24)***	.76 (.40)
Time Alone	.00 (.00)***	-.00 (.00)
Loneliness	—	.40 (.10)***
Sex	-.13 (.06)*	.22 (.10)*
Race (White)	-.26 (.15)	.03 (.23)
Race (Black)	.04 (.15)	.17 (.24)
Race (Asian)	-.06 (.15)	.23 (.23)
Race (Hispanic)	-.05 (.16)	.46 (.25)
Race (Pacific Islander)	-.32 (.50)	.93 (.78)
Race (Other)	.28 (.31)	-.07 (.48)
Religiosity	-.13 (.08)	-.14 (.13)
Religion Importance	.00 (.03)	.01 (.05)
Political Orientation	-.00 (.04)	.13 (.06)*
Political Importance	-.00 (.03)	.13 (.05)*
Problematic Internet Use	.15 (.03)***	.14 (.04)**
$R^2$	.23	.22
$F(14, 254)$	6.02***	5.07***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 6 Mediation Analysis of Social Network Size and Loneliness on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.04 (.23)***	1.62 (.42)**
Social Network Size	-.01 (.00)**	-.00 (.00)
Loneliness	—	.27 (.10)**
Sex	-.11 (.06)	.01 (.10)
Race (White)	-.21 (.15)	-.27 (.24)
Race (Black)	.07 (.16)	.27 (.25)
Race (Asian)	-.04 (.15)	.28 (.25)
Race (Hispanic)	-.02 (.17)	-.14 (.27)
Race (Pacific Islander)	-.13 (.52)	.08 (.84)
Race (Other)	.23 (.31)	.34 (.50)
Religiosity	-.18 (.08)*	-.06 (.14)
Religion Importance	.02 (.03)	-.01 (.05)
Political Orientation	-.01 (.04)	.12 (.06)
Political Importance	-.00 (.03)	-.01 (.06)
Problematic Internet Use	.15 (.03)***	.04 (.05)
$R^2$	.22	.15
$F(14, 254)$	5.66***	3.27***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 7 Mediation Analysis of Social Network Size and Loneliness on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.04 (.23)***	.71 (.40)
Social Network Size	-.01 (.00)**	.00 (.00)
Loneliness	—	.39 (.10)***
Sex	-.11 (.06)	.21 (.10)*
Race (White)	-.21 (.15)	.02 (.23)
Race (Black)	.07 (.16)	.18 (.24)
Race (Asian)	-.04 (.15)	.23 (.23)
Race (Hispanic)	-.02 (.17)	.45 (.25)
Race (Pacific Islander)	-.13 (.52)	.92 (.79)
Race (Other)	.23 (.31)	-.04 (.48)
Religiosity	-.18 (.08)*	-.13 (.13)
Religion Importance	.02 (.03)	.00 (.05)
Political Orientation	-.01 (.04)	.13 (.06)*
Political Importance	-.00 (.03)	.13 (.05)*
Problematic Internet Use	.15 (.03)***	.15 (.04)**
$R^2$	.22	.22
$F(14, 254)$	5.66***	5.04***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 8 Bivariate Correlations and Descriptive Statistics**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1 Time Alone	1.00	-.32***	-.32***	-.18***	.04	.00	.02	.14**	.10*	-.04	-.07	-.05	-.05	-.02	.19***	.23***	.14**	.22***	-.04	-.10*	
2 Network Size		1.00	.27***	-.17**	-.00	-.01	.15**	-.15**	-.15**	.04	.09	.07	.09	.06	-.19***	-.18***	-.11*	-.22***	.06	.11*	
3 Loneliness			1.00	-.13**	-.01	-.13*	.01	-.07	-.11*	.12*	.04	-.03	.08	.07	-.16**	-.16**	-.07	-.16**	.24***	.39***	
4 Need to Belong				1.00	.11*	-.05	-.09	.07	.03	-.09	.07	-.03	-.06	.00	.16**	.15**	.13*	.01	.13*	.03	
5 Norm Deviation					1.00	-.11*	.17**	.00	.02	.07	.01	-.05	.03	-.07	.02	.09	.17**	-.08	.29***	.25***	
6 Age						1.00	-.07	.14**	.25***	-.01	-.18***	-.11*	.02	-.15*	.17**	.20***	.08	.01	-.25***	-.23***	
7 Sex							1.00	-.06	.06	-.07	.01	.06	-.05	-.10*	-.05	-.10	.14**	-.01	.20***	.19***	
8 Education								1.00	.00	-.03	.01	.03	-.01	-.01	.05	.02	-.07	.28***	-.07	-.17**	
9 Race (White)									1.00	-.38***	-.50***	-.45***	-.09	-.44***	.12*	.18***	.16**	.11*	-.12*	-.08	
10 Race (Black)										1.00	-.06	-.06	-.01	-.06	-.02	-.01	-.05	-.07	.06	.04	
11 Race (Asian)											1.00	-.08	-.02	-.07	-.14**	-.16**	-.07	.00	.07	.03	
12 Race (Hispanic)												1.00	-.01	-.07	-.02	-.08	-.10	-.05	.03	.03	
13 Race (Native American)													1.00	-.01	-.05	-.05	.02	-.08	.13*	.07	
14 Race (Other)														1.00	-.01	-.05	-.08	-.08	.04	.02	
15 Religiosity															1.00	.77***	.42***	.10*	.13**	-.09	
16 Religion Importance																1.00	.47***	.10*	.14**	-.11*	
17 Political Orientation																	1.00	.02	.18***	.01	
18 Income																		1.00	-.13*	-.11*	
19 Extremism																			1.00	.44***	
20 Aggression																				1.00	
Mean		46	16.33	2.32	54.56	.80	2.55	1.51	4.34	.75	.05	.08	.06	.00	.06	48	2.26	2.52	3.63	2.76	2.90
SD		30	13.45	.61	26.98	.21	1.25	.50	1.44	.43	.21	.27	.25	.05	.24	.50	1.43	1.08	1.71	.95	.99

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 9 Main Effects of Time Alone and Social Network Size on Extremism

Variable	Time Alone	Social Network
	b (SE)	Size b (SE)
Constant	.92 (.34)**	.94 (.34)**
Time Alone	-.02 (.15)	—
Social Network Size	—	-.00 (.00)
Loneliness	.37 (.07)***	.36 (.07)***
Need to Belong	.00 (.00)*	.00 (.00)*
Norm Deviation	.87 (.21)***	.87 (.21)***
Age	-.16 (.04)***	-.16 (.04)***
Sex	.35 (.09)***	.36 (.09)***
Education	.00 (.03)	.00 (.03)
Race (Black)	.22 (.20)	.22 (.20)
Race (Asian)	.21 (.16)	.20 (.16)
Race (Hispanic)	.16 (.18)	.15 (.18)
Race (Native American)	2.50 (.83)**	2.50 (.83)**
Race (Other)	.19 (.18)	.19 (.18)
Religiosity	.19 (.13)	.19 (.13)
Religion Importance	.08 (.05)	.09 (.05)
Political Orientation	.05 (.05)	.05 (.05)
Income	-.04 (.03)	-.04 (.03)
$R^2$	.26	.26
$F(16, 374)$	9.74***	9.76***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



Table 10 Main Effects of Time Alone and Social Network Size on Aggression

Variable	Time Alone	Social Network Size
	b (SE)	b (SE)
Constant	1.12 (.35)**	1.05 (.35)**
Time Alone	-.12 (.16)	—
Social Network Size	—	.00 (.00)
Loneliness	.62 (.08)***	.62 (.08)***
Need to Belong	.00 (.00)	.00 (.00)
Norm Deviation	1.03 (.21)***	1.03 (.21)***
Age	-.09 (.04)*	-.10 (.04)*
Sex	.28 (.09)**	.27 (.09)**
Education	-.09 (.03)**	-.09 (.03)**
Race (Black)	-.04 (.21)	-.04 (.21)
Race (Asian)	-.04 (.17)	-.05 (.17)
Race (Hispanic)	.12 (.18)	.12 (.18)
Race (Native American)	1.03 (.86)	.99 (.86)
Race (Other)	.04 (.19)	.03 (.19)
Religiosity	.09 (.14)	.09 (.14)
Religion Importance	-.05 (.05)	-.05 (.05)
Political Orientation	-.02 (.05)	-.02 (.05)
Income	.00 (.03)	.01 (.03)
$R^2$	.26	.26
$F(16, 374)$	9.46***	9.43***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 11 Mediation Analysis of Time Alone and Loneliness on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.41 (.16)***	1.85 (.29)***
Time Alone	.48 (.10)***	-.06 (.16)
Loneliness	—	.35 (.08)***
Age	-.05 (.03)*	-.19 (.04)***
Sex	-.04 (.06)	.40 (.09)***
Education	.01 (.02)	.02 (.03)
Race (Black)	.28 (.14)	.25 (.21)
Race (Asian)	-.02 (.12)	.24 (.17)
Race (Hispanic)	-.14 (.12)	.11 (.18)
Race (Native American)	.54 (.59)	2.51 (.86)**
Race (Other)	.07 (.13)	.14 (.18)
Religiosity	-.05 (.09)	.16 (.14)
Religion Importance	-.03 (.03)	.11 (.05)*
Political Orientation	.01 (.03)	.08 (.05)
Income	-.03 (.02)	-.06 (.03)*
$R^2$	.13	.25
$F(14, 376)$	4.17***	8.73***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 12 Mediation Analysis of Time Alone and Loneliness on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.41 (.16)***	2.10 (.31)***
Time Alone	.48 (.10)***	-.15 (.16)
Loneliness	—	.60 (.08)***
Age	-.05 (.03)*	-.13 (.04)**
Sex	-.04 (.06)	.33 (.09)***
Education	.01 (.02)	-.08 (.03)*
Race (Black)	.28 (.14)	.01 (.22)
Race (Asian)	-.02 (.12)	-.02 (.17)
Race (Hispanic)	-.14 (.12)	.06 (.19)
Race (Native American)	.54 (.59)	1.10 (.89)
Race (Other)	.07 (.13)	-.02 (.19)
Religiosity	-.05 (.09)	.04 (.14)
Religion Importance	-.03 (.03)	-.02 (.05)
Political Orientation	.01 (.03)	.01 (.05)
Income	-.03 (.02)	-.01 (.03)
$R^2$	.13	.24
$F(14, 376)$	4.17***	8.29***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 13 Mediation Analysis of Time Alone and Need to Belong on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	55.97 (7.24)***	2.47 (.26)***
Time Alone	-11.69 (4.74)*	.15 (.16)
Need to Belong	—	.00 (.00)*
Age	-1.91 (1.14)	-.20 (.04)***
Sex	-4.43 (2.81)	.40 (.09)***
Education	1.28 (.98)	.01 (.03)
Race (Black)	-11.34 (6.44)	.39 (.21)
Race (Asian)	7.81 (5.23)	.20 (.17)
Race (Hispanic)	-2.07 (5.61)	.07 (.18)
Race (Native American)	-29.06 (26.59)	2.81 (.87)**
Race (Other)	-.54 (5.75)	.17 (.19)
Religiosity	3.86 (4.22)	.12 (.14)
Religion Importance	1.05 (1.54)	.10 (.05)
Political Orientation	2.09 (1.45)	.07 (.05)
Income	-1.04 (.83)	-.07 (.03)*
$R^2$	.09	.21
$F(14, 376)$	2.72**	7.28***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 14 Mediation Analysis of Time Alone and Need to Belong on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	55.97 (7.24)***	3.41 (.28)***
Time Alone	-11.69 (4.74)*	.16 (.17)
Need to Belong	—	.00 (.00)
Age	-1.91 (1.14)	-.15 (.04)***
Sex	-4.43 (2.81)	.32 (.10)**
Education	1.28 (.98)	-.08 (.04)*
Race (Black)	-11.34 (6.44)	.20 (.23)
Race (Asian)	7.81 (5.23)	-.05 (.19)
Race (Hispanic)	-2.07 (5.61)	-.01 (.20)
Race (Native American)	-29.06 (26.59)	1.49 (.96)
Race (Other)	-.54 (5.75)	.02 (.21)
Religiosity	3.86 (4.22)	.00 (.15)
Religion Importance	1.05 (1.54)	-.04 (.06)
Political Orientation	2.09 (1.45)	.01 (.05)
Income	-1.04 (.83)	-.03 (.03)
$R^2$	.09	.12
$F(14, 376)$	2.72**	3.67***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 15 Mediation Analysis of Time Alone and Norm Deviation on Extremism**

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	.75 (.06)***	2.02 (.28)***
Time Alone	-.01 (.04)	.11 (.15)
Norm Deviation	—	.89 (.21)***
Age	-.02 (.01)**	-.19 (.04)***
Sex	.07 (.02)**	.32 (.09)***
Education	.01 (.01)	.01 (.03)
Race (Black)	.08 (.05)	.27 (.21)
Race (Asian)	-.00 (.04)	.23 (.17)
Race (Hispanic)	-.05 (.04)	.10 (.18)
Race (Native American)	.13 (.21)	2.59 (.86)**
Race (Other)	-.05 (.05)	.21 (.19)
Religiosity	-.05 (.03)	.18 (.14)
Religion Importance	.03 (.01)*	.08 (.05)
Political Orientation	.02 (.01)*	.06 (.05)
Income	-.01 (.01)*	-.06 (.03)*
$R^2$	.10	.24
$F(14, 376)$	3.12***	8.37***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 16 Mediation Analysis of Time Alone and Norm Deviation on Aggression**

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	.75 (.06)***	2.79 (.31)***
Time Alone	-.01 (.04)	.14 (.17)
Norm Deviation	—	1.01 (.23)***
Age	-.02 (.01)**	-.13 (.04)**
Sex	.07 (.02)**	.24 (.10)*
Education	.01 (.01)	-.08 (.03)*
Race (Black)	.08 (.05)	.10 (.23)
Race (Asian)	-.00 (.04)	-.03 (.18)
Race (Hispanic)	-.05 (.04)	.03 (.20)
Race (Native American)	.13 (.21)	1.29 (.93)
Race (Other)	-.05 (.05)	.08 (.20)
Religiosity	-.05 (.03)	.06 (.15)
Religion Importance	.03 (.01)*	-.06 (.05)
Political Orientation	.02 (.01)*	-.01 (.05)
Income	-.01 (.01)*	-.02 (.03)
$R^2$	.10	.16
$F(14, 376)$	3.12***	5.08***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 17 Mediation Analysis of Social Network Size and Loneliness on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.76 (.14)***	1.83 (.30)***
Social Network Size	-.01 (.00)***	-.00 (.00)
Loneliness	—	.34 (.08)***
Age	-.06 (.02)*	-.19 (.04)***
Sex	.02 (.06)	.39 (.09)***
Education	.01 (.02)	.02 (.03)
Race (Black)	.29 (.14)*	.24 (.21)
Race (Asian)	-.01 (.11)	.23 (.17)
Race (Hispanic)	-.13 (.12)	.10 (.18)
Race (Native American)	.69 (.58)	2.49 (.85)**
Race (Other)	.11 (.12)	.13 (.18)
Religiosity	-.09 (.09)	.16 (.14)
Religion Importance	-.00 (.03)	.11 (.05)*
Political Orientation	.01 (.03)	.08 (.05)
Income	-.03 (.02)	-.06 (.03)*
$R^2$	.15	.25
$F(14, 376)$	5.04***	8.72***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



Table 18 Mediation Analysis of Social Network Size and Loneliness on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	2.76 (.14)***	2.00 (.31)***
Social Network Size	-.01 (.00)***	.00 (.00)
Loneliness	—	.60 (.08)***
Age	-.06 (.02)*	-.13 (.04)**
Sex	.02 (.06)	.32 (.09)***
Education	.01 (.02)	-.08 (.03)*
Race (Black)	.29 (.14)*	.01 (.22)
Race (Asian)	-.01 (.11)	-.03 (.17)
Race (Hispanic)	-.13 (.12)	.06 (.19)
Race (Native American)	.69 (.58)	1.04 (.89)
Race (Other)	.11 (.12)	-.03 (.19)
Religiosity	-.09 (.09)	.05 (.14)
Religion Importance	-.00 (.03)	-.02 (.05)
Political Orientation	.01 (.03)	.01 (.05)
Income	-.03 (.02)	-.01 (.03)
$R^2$	.15	.23
$F(14, 376)$	5.04***	8.25***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 19 Mediation Analysis of Social Network Size and Need to Belong on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	47.45 (6.59)***	2.57 (.23)***
Social Network Size	.31 (.10)**	-.01 (.00)
Need to Belong	—	.00 (.00)*
Age	-1.90 (1.14)	-.20 (.04)***
Sex	-5.83 (2.76)*	.42 (.09)***
Education	1.24 (.98)	.02 (.03)
Race (Black)	-11.69 (6.41)	.39 (.21)
Race (Asian)	7.45 (5.19)	.20 (.17)
Race (Hispanic)	-2.33 (5.58)	.07 (.18)
Race (Native American)	-32.76 (26.41)	2.86 (.87)**
Race (Other)	-1.65 (5.71)	.18 (.19)
Religiosity	4.70 (4.19)	.11 (.14)
Religion Importance	.49 (1.55)	.11 (.05)*
Political Orientation	2.15 (1.45)	.07 (.05)
Income	-1.12 (.83)	-.06 (.03)*
$R^2$	.09	.22
$F(14, 376)$	2.94***	7.47***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 20 Mediation Analysis of Social Network Size and Need to Belong on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	47.45 (6.59)***	3.52 (.25)***
Social Network Size	.31 (.10)**	-.01 (.00)
Need to Belong	—	.00 (.00)
Age	-1.90 (1.14)	-.16 (.04)***
Sex	-5.83 (2.76)*	.34 (.10)***
Education	1.24 (.98)	-.07 (.04)*
Race (Black)	-11.69 (6.41)	.21 (.23)
Race (Asian)	7.45 (5.19)	-.05 (.19)
Race (Hispanic)	-2.33 (5.58)	-.01 (.20)
Race (Native American)	-32.76 (26.41)	1.53 (.95)
Race (Other)	-1.65 (5.71)	.04 (.21)
Religiosity	4.70 (4.19)	-.01 (.15)
Religion Importance	.49 (1.55)	-.03 (.06)
Political Orientation	2.15 (1.45)	.01 (.05)
Income	-1.12 (.83)	-.03 (.03)
$R^2$	.09	.12
$F(14, 376)$	2.94***	3.80***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 21 Mediation Analysis of Social Network Size and Norm Deviation on Extremism

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	.74 (.05)***	2.11 (.26)***
Social Network Size	.00 (.00)	-.00 (.00)
Norm Deviation	—	.89 (.21)***
Age	-.02 (.01)**	-.19 (.04)***
Sex	.07 (.02)**	.34 (.09)***
Education	.01 (.01)	.01 (.03)
Race (Black)	.08 (.05)	.27 (.21)
Race (Asian)	-.00 (.04)	.23 (.17)
Race (Hispanic)	-.05 (.04)	.10 (.18)
Race (Native American)	.12 (.21)	2.61 (.85)**
Race (Other)	-.06 (.04)	.22 (.19)
Religiosity	-.05 (.03)	.18 (.14)
Religion Importance	.02 (.01)*	.09 (.05)
Political Orientation	.02 (.01)*	.06 (.05)
Income	-.01 (.01)*	-.06 (.03)*
$R^2$	.10	.24
$F(14, 376)$	3.12***	8.52***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 22 Mediation Analysis of Social Network Size and Norm Deviation on Aggression

Variable	a-path	b-path
	b (SE)	b (SE)
Constant	.74 (.05)***	2.90 (.29)***
Social Network Size	.00 (.00)	-.01 (.00)
Norm Deviation	—	1.01 (.23)***
Age	-.02 (.01)**	-.13 (.04)***
Sex	.07 (.02)**	.26 (.10)**
Education	.01 (.01)	-.08 (.03)*
Race (Black)	.08 (.05)	.10 (.23)
Race (Asian)	-.00 (.04)	-.03 (.18)
Race (Hispanic)	-.05 (.04)	.03 (.20)
Race (Native American)	.12 (.21)	1.32 (.93)
Race (Other)	-.06 (.04)	.09 (.20)
Religiosity	-.05 (.03)	.05 (.15)
Religion Importance	.02 (.01)*	-.05 (.05)
Political Orientation	.02 (.01)*	-.01 (.05)
Income	-.01 (.01)*	-.02 (.03)
$R^2$	.10	.16
$F(14, 376)$	3.12***	5.20***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

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