

Loneliness and Theory of Mind in College Students

Todd I. Obilor II
Psychology Department
Gonzaga University
Spokane, WA 99258

Faculty Advisor: Dr. Sarah Arpin

Abstract

Loneliness is an emotional experience as people grapple with the metamorphosis of social groups across their lifespans. This study assesses how general feelings of loneliness relate to social behavior, as well as cognitive attributions for other people, also known as Theory of Mind. No research to date has explored how loneliness in college students relates to theory of mind. I found that loneliness did not predict theory of mind impairments, but it did predict the participants' feelings of social support. Overall, more research is needed on the association between loneliness and theory of mind, and I will explore this with my replication study in the near future.

Keywords: Theory of Mind, Loneliness, Social Cognitive Development

1. Introduction

1.1. Exploring Loneliness

Loneliness is a unique condition in which an individual perceives himself or herself to be socially isolated even when among other people, and the literature suggests that it is quickly becoming a growing public health concern in many industrialized countries². Unfortunately, college students may be at greater risk due to their stress levels being strongly associated with higher levels of loneliness²⁵. However, for high school and college students, their greater willingness to self-disclose resulted in them feeling less lonely⁷. Recent literature suggests that even simply having a roommate lead to college students reporting themselves as feeling less lonely¹¹.

1.2. Feelings of Social Support

Across populations, strong feelings of perceived social support seem to mediate the effects of loneliness^{18,20}. Social support is defined as the information leading one to believe that he/she is cared for, loved, esteemed, and a member of a network of mutual obligations⁴. Lonely college students have smaller social networks^{15,22}. They also report significantly less intimacy, even when they had the same number of friends as students who aren't lonely²⁶. Unfortunately, in the current digital age where students have many more interactions online rather in-person, college students spend significantly less time with peers than their counterparts did 30 years ago²⁴. However, peer-to-peer contact is very important because it has a better effect on mediating the effects of loneliness than when students solely have their family for social support¹⁹.

1.3. Theory of Mind

Loneliness also has devastating effects on how people view their social world. Lonely people are constantly on high alert for social threats and view their social world as threatening and punitive. Therefore, they are much more likely

to act coldly, form negative social impressions, and assign negative attributes towards their peers³. This research is especially relevant when discussing theory of mind. Theory of mind at its core is the ability to attribute mental states to other people and usually develops after the age of five⁸. Theory of mind may play an important role in relationship development, as it involves the ability to take another person's perspective; currently there is a lot of literature that suggests that children with theory of mind impairments are less likely to engage in prosocial behavior^{12, 13}. Currently, the literature exploring links among loneliness and theory of mind is limited to adolescent samples, and in particular adolescents with autism; the focus of previous research has been on autism-related theory of mind impairments¹. Also, there is a lack of tests for theory of mind of college-aged students. However, with modification, it is possible that a theory of mind test called the "Strange Stories Test" can expose theory of mind impairments in college students, based on its use in prior studies^{14,17}. When the "Strange Stories Test" was used with middle childhood children (8 years old-12 years old), theory of mind impairments decreased significantly with age, and low scores were related to loneliness in girls and peer rejection in boys⁶.

1.4. Hypotheses

The aim of this project was to explore if there was a connection between loneliness and theory of mind in college students. Based on previous research regarding loneliness and theory of mind⁶, I predicted that lonely people would have many more theory of mind impairments compared to their counterparts who were not lonely (Hypothesis 1). Furthermore, given strong evidence for negative social cognitions among lonely individuals, I predicted that lonely people would be less likely to answer positively to having feelings of social support due to the correlation between theory of mind and feelings of social support (Hypothesis 2).

2. Methods

2.1. Participants

The study contained 155 students from Gonzaga University (M_{age} : 19.39 years old, SD : 1.88, Range: 18.05- 39.53; 50 males and 98 females; 70.9% Non-Hispanic White, 7.4% Asian, 5.4% Latino, 2.0% Black, 3.37% Other) that were recruited from Introductory Psychology courses at Gonzaga University. The study was conducted using a survey from Qualtrics that was redirected from the Gonzaga SONA system. The students were not compensated monetarily for completing the study, but they received in course credit for their participation.

Overall, some participants were excluded due to incomplete surveys that were submitted to Qualtrics ($n = 7$), and one participant was excluded due to being significantly older than the rest of the sample ($n = 1$).

2.2. Procedure

Participants completed a 30-minute survey on Qualtrics, which included basic demographic questions (age, year in school, ethnicity, etc.), followed by the theory of mind assessment.

2.3. Measures

2.3.1. *loneliness measure*

The measure used to test loneliness was the R-UCLA Loneliness Scale²³, a 20-item scale designed to measure one's subjective feelings of loneliness as well as feelings of social isolation. For example, some of the items were: "I lack companionship", "I have a lot in common with those around me", and "My social relationships are superficial". Participants rated each item on a scale from 1 (Never) to 4 (Often). Therefore, a high score was in the 45-60 point range, while a low score was in the 20-35 point range.

2.3.2. *depression and anxiety scales*

In order to control for participants who were possibly at risk for depression and social anxiety, participants also completed two separate measures to test for those disorders. The first of these was the Depression-Happiness Scale (D-HS)¹⁶, which is a 6-item measure to evaluate overall well being, which asked questions such as “I felt dissatisfied with my life” and “I felt happy”. The other was the Social Interaction Anxiety Scale (SIAS)²¹, which is a 20-item scale that assesses fear of general social interaction. The measure used a scale that rated how true each statement was for the participant. For example, one statement was “When mixing socially, I am uncomfortable”, which offers insight into a participant’s social tendencies and issues.

2.3.3. *interpersonal support scale*

Lastly, participants completed the Interpersonal Support Scale⁵, a 12-item scale that gauges whether or not a participant felt as if they had sufficient support from amongst their social circle. It specifically asked for feelings of support for possible scenarios in order to measure the quality of friendship such as “If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.

2.3.4. *theory of mind assessment*

For the “Strange Stories Test”, participants were given four separate stories from common situations. Two of the stories contained a noticeable awkward situation while the other two stories did not. The order of these stories was randomized for each participant. The participant was instructed to read each story and then answer the question, “Did anyone say something they shouldn't have said or something awkward?” If the participant responded with “Yes”, they were then prompted to answer specifics about the situation, i.e. “Who said it?”, “Why shouldn't he or she have said it?”, etc. (If the participant responded with “No”, they were directed to only answer the control questions.) At the end of every story, participants also had to answer simple control questions about the story to test for comprehension, such as “In the story, who was hosting the party?”

The score for the assessment were as follows: for all four stories, participants received one point for correctly answering the question that asked if the situation was awkward or not awkward. For the two stories that did not have awkward situations, the maximum amount that a participant could score was that sole one point. For the two stories with an awkward situation, the participants answered five qualitative questions that asked about the specifics of the awkward situation. I coded and scored those answers in accordance with score sheet provided by the creator of the measure. The maximum score that a participant could receive was a 14. All the stories had two control questions at the end that did not count towards their composite score.

3. Data

3.1. Data Analytic Plan

To test whether lonely people exhibit more theory of mind impairments compared to their counterparts who are not lonely, I used the multiple regression – loneliness predicting theory of mind impairments, controlling for gender and age.

Also, in order to test whether theory of mind impairments mediate the association of loneliness and prosocial behavior/social support I used multiple regression, and estimate confidence intervals to test for indirect effects. All analyses were conducted with SPSS 21.0 statistical software, using the PROCESS macro¹⁰.

3.2. Results

At the conclusion of the study, the findings did not support the original hypothesis in that there was no significant statistical correlation between loneliness and theory of mind, $r = -.072$. However, my hypothesis was supported in that loneliness was associated with less perceived feelings of social support, $r = -.640$, $p < 0.01$. Exploratory analyses

revealed that higher levels of social anxiety were associated with loneliness, $r = .483, p < 0.01$, with less social support, $r = -.434, p < 0.01$, and with participants being women, $r = .207, p < 0.05$. These exploratory analyses were calculated through looking at other correlates collected by SPSS to see possible future populations to study.

4. Discussion

The aim of this study was to examine if there was indeed an association between loneliness and theory of mind. Further, we were interested in exploring these phenomenon specifically in a non-clinical college student sample.

Although loneliness did not predict impairments in theory of mind, it did predict feelings of social support, in line with previous research. In terms of the link between loneliness and theory of mind, this study was the first to explore the association between the two variables within the frame of college students. Since previous research has explored the correlation of loneliness and theory of mind within a sample of younger middle school students, more research is needed to explore this question in different populations.

The study also had some limitations, which may have impacted results. Primarily, the majority of the participants were women. This may have introduced bias in the results, as loneliness in women is documented as mainly due to deficits in perceived social support while in men, it is mainly due to social acceptance⁶. Also, the “Strange Stories Test” for theory of mind has been primarily used with people who have Autism Spectrum Disorder (ASD), so more research is needed in relation to being used with adolescents and adults without the disorder.

4.1. Future Directions

In the subsequent study, I will further explore this correlation between theory of mind and loneliness in college students; however, there will be some changes to the protocol. For example, the study will implement the “Reading the Mind in the Eyes” Task that was popularized by Simon Baron-Cohen. This measure utilizes quantitative data collection in order to eliminate coding bias during analysis.

4.2. Conclusion

This study is the first to research the correlation between loneliness and theory of mind in the hopes that it will teach us about the nature of social relationships and their effects on cognitive processes. The complexity of loneliness and theory of mind as variables inarguably warrant more research on both topics among a vast variety of populations especially older adolescent and young adult populations.

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6. References

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