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The impact of alexithymia on initial interactions

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Abstract

This study proposed several hypotheses predicting a deficit in the ability of alexithymic individuals to present themselves as attractive to a relational partner during an initial interaction. Both alexithymic and nonalexithymic individuals participated in a 10-min interpersonal exercise with a stranger of the opposite gender. Relational partners were more attracted to nonalexithymics than alexithymics. Partners perceived higher levels of several relational messages from nonalexithymics than alexithymics and lower levels of formality and dominance. Finally, the relational message of intimacy fully mediated the relationship between group membership (alexithymic or nonalexithymic) and social attraction. The authors suggest several implications and directions for future research, such as the need to include psychological traits in theoretical examinations of communication competence.

Social scientists have long proposed that humans possess a fundamental need to engage in positive social interactions and to build and maintain close relationships (Baumeister & Leary, 1995; Maslow, 1968; Shutz, 1958). Individual fulfillment of this goal has been linked to attachment security (La Guardia, Ryan, Couchman, & Deci, 2000), better performance in school (Furrer & Skinner, 2003), fewer instances of stress and depression (Floyd, 2002), and less risk of developing cancer or heart disease (Kiecolt-Glaser & Newton, 2001). However, there appear to be severe consequences for failing to fulfill this goal, including increases in physical pain (MacDonald & Leary, 2005) and loneliness (Reis, 1990), decreases in cardiovascular function (Cacioppo et al., 2000), an increased likelihood of developing a mental illness (Bloom, White, & Asher, 1979), and decreased overall mental and physical health (Seeman, 1996).

Initial interactions thus become consequential in terms of relational development and individual fulfillment of this need. People use the information they receive during an initial interaction to make important decisions about whether they want the relationship to continue, in contexts ranging from dating to job interviews to doctor–patient interactions. Previous research has found that this information can consist of physical attraction (Peretti & Abplanalp, 2004), similarity (Jones, Pelham, Carvallo, & Mirenberg, 2004), and communication behaviors such as nonverbal immediacy (Floyd & Burgoon, 1999). However, few works have focused on how individual psychological traits can impact a person's ability to properly engage in initial interactions. It is our argument that if these traits are found to be consequential to the communication messages found in initial interactions, then those traits would be inhibiting the ability of the individual to build and maintain successful relationships. We will focus on one such possible trait in this study, that of alexithymia, the ability of an individual to understand and

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communicate emotions. To do so, we will first discuss the importance of initial interactions, delve into the relational messages communicated during such interactions, and then touch on alexithymia as a trait that leads to a deficit in the ability of an individual to convey positive relational messages to others.

The importance of initial interactions

Communication scholars have long posited that the communication found within initial interactions can be extremely important for long-term relational development. This work has formed the basis of several foundational communication theories, including uncertainty reduction theory (Berger & Calabrese, 1975) and predicted outcome value theory (Sunnafrank, 1986). In their seminal work on uncertainty, Berger and Calabrese (1975) posed that competent communicators in initial interactions must accomplish certain tasks, including knowing the appropriate way to behave during the interaction according to the rules of the given context, being aware and able to communicate certain attitudes and basic values, and ascertaining plans for any future interactions one might have with this individual. The overall goal of the interaction was thus to reduce uncertainty about the other person, thus increasing positive outcomes such as liking, reciprocal self-disclosure, and intimacy (Berger & Calabrese, 1975). Future scholars, while somewhat subjugating the role of uncertainty in initial interactions, still found initial conversations important in determining attraction (Douglas, 1990; Kellerman, 1986; Sunnafrank & Miller, 1981; Van Lear & Trujillo, 1986).

Recently, scholars have begun to examine the consequences of initial interactions in a wide variety of contexts. One burgeoning area of research has been in first-date interactions (e.g., Mongeau, Serewicz, & Therrien, 2004; Serewicz & Gale, 2008). This work has been widened to include online dating (Ellison, Heino, & Gibbs, 2006) and speed dating (Houser, Horan, & Furler, 2008). Indeed, studying speed dating as an initial interaction can continue to yield fascinating results, as individuals are required to make dating decisions about others in less than 10 min. Houser and colleagues (2008) found a positive relationship between nonverbal immediacy cues communicated during a speed dating interaction and positive outcome value judgments (Houser et al., 2008). Other initial interaction contexts studied by scholars have included job interviews (Dougherty, Turban, & Callender, 1994) and doctor–patient communication (Korsch, Gozzi, & Francis, 1968; Sheer & Cline, 1995). Indeed, patient satisfaction levels, which have been found to relate to patient compliance, can be affected from the very first interaction between the doctor and the patient (Korsch et al., 1968).

It is apparent that communication in a wide variety of initial interactions is consequential to the decision of an individual to engage in future interactions and is thus worthy of study. One of the main ways that communication scholars have delved into this area is in the idea of relational messages, which we will now discuss.

Relational messages

Burgoon and Hale (1984) identified as many as 12 dimensions of relational messages that served as the primary themes individuals used in their communication to their relational partners to define those same relationships. These relational messages, or topoi, are embedded in both verbal and nonverbal communicative events to a relational partner and thus gave communication researchers the ability to probe both communicative exchanges as well as individual perceptions about their relationships (Burgoon, Buller, Hale, & de Turck, 1984). Burgoon and Hale (1987) later reduced the relational topoi to a smaller number of interrelated groups, including affect/involvement, similarity/depth, receptivity/trust, composure, formality, dominance, equality, and task management. Subsequent research has targeted the number of topoi anywhere from four to eight, depending on how individuals collapsed several of the categories (Burgoon, 1991; Burgoon & Le Poire, 1999; Mikkelson & Hesse, 2009). For this study, we used the eight topoi found by Burgoon and Hale (1987), as it is the number most commonly used in the literature.

Overall, the eight relational messages cover a wide swath of perceptions regarding individual personality and relationship potential. *Affect/involvement* refers to the degree of positive or negative affect felt by one member of the relationship toward the other (Burgoon & Hale, 1984). The messages of *similarity/depth* (the degree to which partners share attitudes, beliefs, and values) and *receptivity/trust* (perceptions of interest and integrity) also point to general feelings of intimacy toward the relational partner (Burgoon & Hale, 1984; Burgoon & LePoire, 1999). For this particular study, the first three messages were combined into the general category of *intimacy*, as has been done in previous studies (e.g., Mikkelson & Hesse, 2009). Next, the messages of *dominance* and *equality* deal with power and control (Burgoon & Hale, 1987). Although the previous five messages were more global in nature, the relational messages of *composure* (how comfortable the relational partner is during the interaction), *formality* (the degree of decorum being exhibited), and *task management* (how focused the conversation is on the task at hand) apply to the specific relational interaction.

The manner and degree to which these relational messages are communicated during interactions can be extremely consequential to relational development (Burgoon et al., 1984). Scholars have long believed that the relational dimensions of dominance and intimacy are primary vehicles by which individuals define their relationships (Dillard, Solomon, & Palmer, 1999; Floyd, 2006; Rogers & Farace, 1975). For example, interactions high in dominance and formality are characterized by competitiveness, aggressiveness, and distance between the relational partners (Burgoon & Hale, 1987). Interactions high in positive affect and affection, on the other hand, positively relate to perceptions of relational closeness and satisfaction (Floyd, 2002, 2006). These consequences have led scholars to examine the impact of relational messages on marital interactions (Kelley & Burgoon, 1991), computer-mediated communication (Walther, 1994), conversations about religion (Mikkelson & Hesse, 2009), conversations with varying degrees of relational uncertainty (Knobloch & Solomon, 2005), and conversations during a first date (Morr & Mongeau, 2004).

Again, we propose that individual perception of these messages is extremely consequential for relationship development. We also propose that this is especially true during an initial interaction, where decisions of attraction and willingness to proceed with the relationship are being made. Therefore, any attribute that impedes the ability of an individual to communicate relational messages of warmth and closeness is worthy of study. We will now define and explore the psychological trait of alexithymia, explaining how it can negatively affect our ability to engage in positive initial interactions.

Alexithymia

One psychological trait that scholars believe impedes the ability of an individual to understand and communicate emotion is *alexithymia*, a term coined by Sifneos (1973) after several therapy sessions in which he noticed his patients appearing to be stone-faced and distant, and unable to communicate on an emotional level. Alexithymia simply means a lack of words for emotions (Taylor, Bagby, & Parker, 1997). Scholars have conceptually defined alexithymia by four specific characteristics: (a) it hinders an individual from recognizing and communicating his or her emotional state, (b) it reduces the capacity to engage in fantasy, (c) it results in an externally oriented cognitive style, and (d) it creates difficulty in distinguishing between feelings and the bodily sensations of emotional arousal (Bagby, Parker, & Taylor, 1994). Individuals who are alexithymic have a tremendous amount of difficulty in several steps of the emotional process. They do not understand their own emotions, perhaps due to a deficit in working memory, and they find it extremely difficult to communicate in emotional language, either about their own feelings or that of others. Instead, they regularly appear distant and uninterested (Taylor et al., 1997). Currently, alexithymia is largely studied using the Toronto Alexithymia Scale (TAS–20; Bagby et al., 1994),

which is a self-report measure that has shown high levels of reliability across time and cultures. Other forms of measurement include the Bermond–Vorst Alexithymia Questionnaire (Vorst & Bermond, 2001) and an interview protocol entitled the Toronto Structured Interview for Alexithymia (Bagby, Taylor, Parker, & Dickens, 2006).

One recent study found that alexithymic individuals find it more difficult than nonalexithymic individuals to even make lexical decisions in communicating emotions (Suslow & Junghanns, 2002). Although alexithymia appears to be somewhat state dependent (e.g., positively correlated with depression; Honkalampi, Hintikka, Antikainen, Lehtonen, & Viinamaki, 2001), multiple longitudinal studies have shown a high level of test–retest reliability with the measure of alexithymia, with alexithymia scores remaining relatively stable (Luminet, Bagby, & Taylor, 2001; Saarijärvi, Salminen, & Toikka, 2006; Salminen, Saarijärvi, Toikka, Kauhanen, & Äärelä, 2006).

A few studies have examined the incidence and etiology of alexithymia in normal populations. For example, one study placed the incidence of alexithymia in a European adolescent population at 10% for girls and 7% for boys, though overall the boys scored higher on the alexithymia scale than the girls (Joukamaa et al., 2007). However, it is important to note that most alexithymia researchers operationally define alexithymia as a continuous measure, wherein everyone experiences some measure of alexithymia.

To answer the question of etiology, several researchers used an extremely large sample from the Northern Finland 1966 Birth Cohort Project to assess the relationship between alexithymia and family relationships (Joukamaa et al., 2003). The project initially consisted of over 12,000 babies born in two provinces of Finland in 1966. The researchers sent a follow-up questionnaire that included a measurement of alexithymia to the sample 31 years later, receiving back roughly 5,100 responses. The results showed that people born in rural areas were more likely to be alexithymic than people born in urban areas. More important, alexithymia in adulthood was associated with being an unwanted child or being born into a family with many children. These findings support the idea that social upbringing can influence the individual development of alexithymia.

The concept of an emotional processing deficit is not limited to alexithymia. Indeed, there are numerous psychological conditions that limit emotional processing. Several pervasive developmental disorders (PDDs), including autism spectrum disorders and Asperger's disorder (AS), include symptoms involving a lack of ability to communicate emotions both verbally and nonverbally (Ghaziuddin, Alessi, & Greden, 1995). Individuals with PDDs are also impaired in their ability to socialize and communicate with others, though they might have no impairment in their intellectual capacity (Landrigan, 2010). Individuals with AS usually have normal to high intellectual ability, though combined with a lack of physical and social understanding. It is estimated that 6–7 children per 1,000 are classified in the spectrum of autistic disorders (Nicholas et al., 2008). Other conditions that include an emotional processing deficit include posttraumatic stress disorder (PTSD), clinical anhedonia (the inability to experience positive emotions), and anxiety disorders (Etkin & Wager, 2007). Although these are all different conditions from alexithymia, the fact that they share the problem of emotional processing highlights the importance of studying emotional competence. What we learn about alexithymia can potentially educate us on the interaction impairments that are common in all these conditions.

Over the past 20 years researchers have built a large body of work regarding the relationship between alexithymia and a host of outcome variables, both psychological and physiological (see reviews in Taylor & Bagby, 2004; Taylor et al., 1997; Zackheim, 2007). Alexithymia has been linked to higher levels of depression (Ahlberg et al., 2001; Hesse & Floyd, 2008; Honkalampi et al., 2001; Sexton, Sunday, Hurt, & Halmi, 1998), stress (Hesse & Floyd, 2008), unhealthy behaviors such as obesity and laziness (for review, see Lumley, Stettner, & Wehmer, 1996), eating disorders (Sureda, Valdés, Jódar, & de Pablo, 1999),

and the tendency to have a fearful attachment style (Wearden, Lamberton, Crook, & Walsh, 2005).

However, this body of research remains sparse in two key areas. First, very few studies have examined the impact of alexithymia on relationships. Brody (2003) found an inverse correlation between alexithymia and the frequency of vaginal intercourse for women (although not for men). Another recent study found an inverse correlation between alexithymia and the amount of affection given to that closest relationship, the general amount of affection normally given and received during the course of one's lifetime, and the amount of nonverbal immediacy one would commonly show during interpersonal interactions (Hesse & Floyd, 2008). However, this study also found that affectionate experience completely mediated the relationship between alexithymia and both relational closeness and the amount of affection given to that closest relationship. The researchers posited that, overall, the results suggested that affection promotes well-being, perhaps leading to one potential reason why alexithymia is related to poor mental health and overall wellness (Hesse & Floyd, 2008).

Second, the previous literature (including Hesse & Floyd, 2008) once again largely failed to examine the real-time relational consequences of alexithymia, instead focusing on correlational data taken from self-reports. To the best of our knowledge, only one study has empirically examined any real-time differences in interpersonal emotional communication between individuals high and low in alexithymia. Troisi and colleagues (1996) found an inverse relation between the amount of nonverbal expressiveness (e.g., yawning, self-grooming, fumbling, and closing the eyes) for individuals during a psychiatric interview and alexithymia, and a positive relation between alexithymia and individual behaviors indicating avoidance, anxiety, and tension. Alexithymic individuals were overly tense and eager to remove themselves from the interaction, contributing lower amounts of emotional communication. This supports our claim that alexithymia negatively affects interpersonal communication and, in turn, the ability to engage in positive social interactions.

However, certainly social skill is not only affected by emotional processing. Thus, it is possible that people with this deficit compensate in other ways. For example, because we know that a good portion of individuals with PDDs have normal or greater cognitive faculty than individuals without a PDD, individuals could compensate for their emotional processing deficit with additional cognitive processing in a social interaction. This is possible, but we would argue that it is not particularly likely, and if it is not the case, then what we need to know is how people with emotional processing deficits are actually impaired in a social setting. For example, in what ways do these people limit their ability to form and maintain relationships? With this information we can start developing interventions to help people with emotional processing deficits learn more effective social skills despite their condition.

This study uses a real-time interpersonal interaction to focus specifically on alexithymia's impact on initial interactions, including the level of relational messages communicated during the interaction and the level of attraction felt by the relational partner toward the participant.

Hypotheses

As a whole, the alexithymia literature strongly supports the notion that alexithymia represents a deficit in the ability of individuals to attune both to their own emotions and those of others. This deficit is consequential, as numerous scholars have detailed a strong relation between the skills of empathy and self-monitoring and positive social interactions (Friedman & Miller-Herringer, 1991; Ickes, 1997; Levenson & Reuf, 1997; Snyder, 1987). Thus, we would argue that alexithymia should affect the ability of an individual to engage in positive initial interactions by influencing the types of relational messages that a relational partner would perceive as coming from the participant. Indeed, communication scholars have long posited that emotions play a part in a host of relational messages communicated

between relational partners during an interpersonal interaction (Burgoon & Hale, 1984).

These observations imply several testable hypotheses, the first of which is that relational partners will perceive lower levels of relational messages involving intimacy from alexithymic individuals than nonalexithymics. This prediction is supported by previous research showing an inverse relationship between alexithymia and trait levels of affectionate communication (Hesse & Floyd, 2008). This leads to our first hypothesis:

H1: *Confederates will report lower levels of relational messages involving intimacy from alexithymics during the interaction than nonalexithymics.*

Participants high in alexithymia should also find themselves less comfortable in the interaction, treating the interaction as a task and a chore instead of a time to get to know someone else. Again, previous research has shown that people high in alexithymia exhibit higher degrees of tenseness and eagerness to leave during an interaction (Troisi et al., 1996). This leads to our second hypothesis:

H2: *Confederates will report lower levels of relational messages involving composure and higher levels involving formality and task management from alexithymics during the interaction than nonalexithymics.*

In addition, the lessened ability to attune to another's emotions should leave individuals high in alexithymia with a tendency during an interaction to not adapt according to the needs of the partner. This lack of adaptation could appear to the partner to be due to an attempt to dominate the way that the conversation proceeds. This leads to our third hypothesis:

H3: *Confederates will report higher levels of relational messages involving dominance and lower levels of equality from alexithymics during the interaction than nonalexithymics.*

If the above hypotheses are true, then it stands to reason that the difference in relational messages will impact the overall outcome of the initial interaction. One way to examine this outcome is through measures of attraction. Previous studies have found a relation between social and emotional competence and physical attraction (Lewandowski, Aron, & Gee, 2007; Reis et al., 1990). Besides physical attraction, we would also expect an inverse relationship between alexithymia and both social and task attraction. This leads to our fourth hypothesis:

H4a: *Confederates will feel lower levels of social attraction to alexithymics after the interaction than nonalexithymics.*

H4b: *Confederates will feel lower levels of task attraction to alexithymics after the interaction than nonalexithymics.*

H4c: *Confederates will feel lower levels of physical attraction to alexithymics after the interaction than nonalexithymics.*

Finally, it is important to ascertain whether it is alexithymia that causes the attraction deficit or the communication that is taking place during the interaction. Previous research suggests that the specific message of intimacy is important to attraction after an initial interaction (Berger & Calabrese, 1975). Thus, we will also pose a research question regarding the mediating influence of intimacy on alexithymia and social attraction.

RQ1: *Does the relational message of intimacy mediate the relationship between alexithymia and social attraction?*

Method

Participants

Participants ($N = 84$) were 42 men and 42 women ranging in age from 18 to 40 years ($M = 21.08$ years, $SD = 3.45$). A large majority of the sample self-identified as Caucasian (73.8%), with 10.7% self-identifying as Hispanic, 9.5% as African American, 10.7% as Asian, 1.2% as Native American, and 4.8% as Other (these percentages sum to >100%

because 6 participants identified with more than one ethnic group.) Most of the participants (95.2%) had never been married, whereas 2.4% were married and 2.4% were divorced.

Confederates ($N = 84$) were also 42 men and 42 women ranging in age from 18 to 34 years ($M = 21.17$ years, $SD = 2.80$). Once again, the majority of confederates self-identified as Caucasian (79.8%), with 7.1% self-identifying as Hispanic, 6% as African American, 8.3% as Asian, 1.2% as Native American, and 1.2% as Other (only 2 confederates identified with more than one ethnic group). Most of the confederates (95.2%) had also never been married, whereas the remaining 4.8% were married.

Recruitment and prescreening

Participants were recruited from undergraduate courses at a large university in the Southwestern United States. We advertised the study by e-mailing interested instructors and asking for permission to recruit their students. If we received permission from the instructors, we went to the various classes to describe the study (including the initial questionnaire and the laboratory session) and inform prospective participants that they would receive extra credit for their participation. At that time we distributed the necessary contact information, as well as a link to the online questionnaire, which was posted on the Web site SurveyMonkey.com.

The online questionnaire began with a brief note stating that participants were consenting to their participation in the questionnaire part of the study by filling out and returning the questionnaire. Interested participants then completed the online questionnaire, which consisted of several physiological, mental, and relational health indices. The final page of the questionnaire elicited participants' contact information, including their e-mail address and a telephone number. The participants were informed that they would be contacted soon if they qualified to continue with the second part of the study.

The other important measure of note in the online questionnaire was the measurement of trait alexithymia. Alexithymia was measured with the TAS–20 (Bagby et al., 1994), which has previously shown a high level of validity and reliability in several studies (for review, see Taylor & Bagby, 2004). Items on the TAS–20 include, "I am often confused about what emotion I am feeling" and "People tell me to describe my feelings more." Specifically, earlier tests have supported content validity, concurrent validity, and predictive validity by correlating alexithymia with a host of outcome measures (see Bagby et al., 1994; Taylor & Bagby, 2004). The TAS–20 has also proven sufficiently reliable, with excellent test–retest findings and high levels of internal consistency (e.g., Saarijarvi et al., 2006). Participant reports of alexithymia showed high levels of reliability ($\alpha = .93$), while confederate reliability levels were lower but still acceptable ($\alpha = .60$).

From these results, we selected 84 participants through a multistep process. Research assistants first screened each questionnaire to ensure that the prospective participant had completed all the necessary information, including the alexithymia measure, the contact information, and the exclusion criteria. They then computed the sum of the trait alexithymia measure for each prospective participant. Individuals who qualified as either alexithymic or nonalexithymic were placed in one of four groups: male/alexithymic, male/nonalexithymic, female/alexithymic, and female/nonalexithymic. Finally, we contacted the prospective participants to invite their participation in the laboratory study. If they agreed, they were scheduled for a future laboratory session.

Inclusion and exclusion criteria

Earlier studies classified an individual as having alexithymia if his or her score was greater than or equal to the 60th percentile score (e.g., a score of 60 out of 100 on a 5-point scale; see Joukamaa et al., 2007). We thus endeavored to create the alexithymic group from individuals who scored near or above a sum of 84 on the trait alexithymia measure because we used a 7-point scale (i.e., 84 of 140). To ensure that there would be a significant difference on mean alexithymia between the

alexithymic and nonalexithymic group, individuals were only qualified as nonalexithymic if they scored near or below a sum of 50 on the trait alexithymia scale.

Prospective participants were excluded from participating if they reported ever having been diagnosed with clinical depression, anxiety or mood disorders, eating disorders, or personality disorders, as these could be possible confounds with the effect of alexithymia on the interaction.

Although a large number of individuals filled out the online questionnaire ($N = 1,013$), 14% did not complete all necessary portions of the questionnaire and another 19% were excluded due to one of the above criteria. A small portion qualified as alexithymic (a sum score of 80 or higher on the trait alexithymia scale), with 5% qualifying for the male/high alexithymic group and another 5% qualifying for the female/high alexithymic group. Another portion qualified as nonalexithymic (a sum score of 50 or below on the trait alexithymia scale), with 3% qualifying for the male/low alexithymic group and 8% qualifying for the female/low alexithymic group.

Confederates

From our initial sample, the male and female participants who scored between 51 and 79 on the trait alexithymia scale (47% of the total sample) were qualified to participate in the study as participant confederates. Thus, we also contacted these individuals through e-mail or phone and asked them to contact us about setting up a laboratory appointment. We matched them with an opposite-gender participant for a laboratory session. We did this because we know from previous research that both men and women communicate more emotion to women than to men (for a review, see Floyd, 2006). Thus, this appears to be the interpersonal pairing most likely to reduce the variability in the amount of emotional communication due to gender. If we used same-gender pairs, there would have been a large amount of variance between the female pairs and the male pairs. However, opposite-gender pairs should be in the middle, lessening (though not completely removing) variance due to gender. We did not match on any other variable, as we did not expect any other variable, including age or ethnicity, to significantly influence the amount of emotional communication during the interaction. However, we controlled for these variables in the hypothesis tests.

Procedures

The experimental participants (Participants A) and participant confederates (Participants B) both made an appointment to come into the Communication Sciences Laboratory at Arizona State University, with every experiment involving one participant and one confederate. Both individuals were first instructed to sign an informed consent form detailing their involvement in the study and describing potential benefits and risks. They were told that they would take part in a "get to know you" exercise with their partner while being videotaped. The informed consent form included consent for the audio and video recording.

Both then completed a brief two-question manipulation check used by Palmer and Simmons (1995) detailing the extent of their relationship with the other person before the session. The first question asked, "How well would you say that you and your partner know each other?" with responses ranging on a 7-point Likert scale from 1 (*not at all*) to 7 (*very well*). The second question asked, "How would you describe your relationship with this person?" with responses ranging on a 7-point Likert scale from 1 (*stranger*) to 7 (*close friend*). If the people in a pair indicated that they did know each other or had interacted several times before, we rescheduled both the participant and the confederate to return at another time with another individual. Specifically, if either individual responded with a 3 or more on either item, the session would immediately have been ended.

The researcher in charge of the laboratory session then told participants that they would be tossing a coin to determine their roles in the activity randomly. The coin toss was fixed,

such that Participant A (the experimental participant) was always assigned to begin the activity. At this point, the participants were separated, ostensibly to complete additional premeasures of affect and attraction, under the guise that separating them would prevent them from seeing each other's answers. Participants A remained in the laboratory to complete their measures. Participants B were escorted to a different room, where they were informed of their role as a confederate. They were instructed to give emotionally provocative answers to the questions posed in the exercise. For example, one of the questions asked the participants to discuss an embarrassing moment from their childhood. Confederates were asked to give an answer that would promote feelings such as disgust, embarrassment, or sadness. They were given the questions ahead of time and allowed a few minutes to think about their answers to the questions.

At this point, the participant and confederate were reunited in the laboratory and instrumented for assessments of heart rate, diastolic blood pressure, and systolic blood pressure. The results from these tests are not included in this article. After those assessments, the researcher turned on the video cameras.

The researcher subsequently gave the participants a set of 10 randomly ordered questions to ask each other. The questions included those used by Floyd and Burgoon (1999): "Talk about the most significant person in your life right now," "Describe an embarrassing situation or incident from your childhood," "What do you think makes a successful romantic relationship?" "What do you see your life being like ten years from now?" and "Describe the most unpleasant job you have ever had to do." Five other questions were added to ensure that the participants had enough topics to fill the time. These included "Talk about what your first day of college was like," What's the worst class you've ever taken, and why?" "Talk about the best vacation you've ever been on," "Describe a sad event or situation from your childhood," and "Describe the best day you've ever had." The researcher reminded the participants that their conversation would be video- and audiotaped, and recommended spending 2–3 min on each topic, with the interaction lasting 10 min. The researcher also instructed participants to continue talking if they finished discussing all 10 questions and to make the interaction as natural as possible. Because they "won" the coin toss, Participants A were instructed to begin the activity. During the interaction, the confederate purposely gave answers that were emotionally provocative.

After the interaction, both participants were deinstrumented, separated, and told to complete a final questionnaire assessing several key variables. These included the measure of attraction and measures focusing on the communication of relational messages. After the participants completed all the necessary forms, the researcher debriefed them on all aspects of the study. The researcher also made sure that the participants signed their names and the name of their instructor on the extra credit form, subsequently excusing them from the laboratory.

Measures

Physical attraction (PA), *social attraction* (SA) and *task attraction* (TA) were measured with the Interpersonal Attraction Scale (IAS: McCroskey & Richmond, 1979). The IAS was originally developed by McCroskey and McCain (1974), but McCroskey and Richmond slightly altered the scale to improve overall reliability (McCroskey & Richmond, 1979). This scale is composed of subscales measuring PA (attraction to another's appearance), SA (attraction to another's personality), and TA (attraction to another's skills or abilities). Previous research supports this scale's content validity as well as internal consistency (McCroskey & McCain, 1974). The IAS has been used numerous times in the past 30 years and has consistently shown high reliability and convergent and predictive validity (e.g., Ayres, 1989; Duran & Kelley, 1988). Confederate reports of PA, SA, and TA after the relational interaction showed high levels of reliability (PA: $\alpha = .86$; SA: $\alpha = .78$; TA: $\alpha = .84$).

Relational communication messages (dominance, formality, intimacy, composure, equality, and task orientation) were measured using Burgoon and Hale's (1987) Relational Communication Scale (RCS). The RCS has been widely used and validated and is capable of discriminating immediate from nonimmediate behaviors, dimensions of credibility, and communicator valence (Burgoon & Hale, 1987). Specifically, this scale was utilized to measure confederates' perceptions of relational messages from the participant. High levels of reliability were found for intimacy ($\alpha = .92$), composure ($\alpha = .86$), formality ($\alpha = .60$), task orientation ($\alpha = .73$), and equality ($\alpha = .63$). Lower levels of reliability were found for dominance ($\alpha = .53$). A full list of intercorrelations between variables can be found in Table 1.

Manipulation checks

Two manipulation checks were conducted in this experiment. The first was to ascertain whether the high alexithymia condition differed from the low alexithymia condition. To do this, we ran an analysis of variance (ANOVA) with two factors, condition and gender, and the dependent variable of self-reported trait alexithymia. To support the manipulation, the high-alexithymia condition would need to score significantly higher on trait alexithymia than the low-alexithymia condition. We included gender as an additional factor because each condition was equally split by gender. We ran a factorial ANOVA to assess the group difference on trait alexithymia by condition and gender. The main effect for condition was significant, $F(1, 80) = 492.11$, $p < .001$, partial $\eta^2 = .86$. The main effect for gender and the Condition $\times$ Gender interaction effect were both nonsignificant. An examination of the means showed that the high-alexithymia group ($M = 4.30$, $SD = 0.58$) scored significantly higher on trait alexithymia than the low-alexithymia group ($M = 2.03$, $SD = 0.31$). Thus, the alexithymia manipulation was successful.

It was also necessary to ensure that the participant and confederate were strangers at

Table 1. *Descriptive statistics, alphas, and intercorrelations for predictor and outcome variables*

Variable	*M*	*SD*	α	1	2	3	4	5	6	7	8
1. Intimacy	4.68	0.79	.92								
2. Formality	2.94	1.10	.60	−.30**							
3. Composure	5.21	1.13	.86	.38**	−.36**						
4. Task orientation	3.92	1.29	.73	−.49**	.17	−.07					
5. Dominance	3.19	0.81	.53	.16	.09	−.22*	−.19				
6. Equality	5.71	0.87	.63	.61**	−.29**	.36**	−.03	.02			
7. Social attraction	5.29	1.06	.78	.53**	−.29**	.36**	−.24*	.03	.29**		
8. Task attraction	5.32	1.02	.84	.47**	−.13	.41**	−.14	.01	.43**	.61**	
9. Physical attraction	5.10	1.12	.86	.28**	−.20	.30**	−.03	−.13	−.03	.54**	.42**

Note. All variables were measured on a 1–7 scale wherein higher scores indicate greater levels of the variable.
* $p < .05$. ** $p < .01$.

the beginning of the exercise. As previously stated, both the participant and confederate completed a brief two-question manipulation check used by Palmer and Simmons (1995) detailing the extent of their relationship with the other person when both individuals had initially entered the laboratory. For the first question, no participant or confederate rated his or her relationship to the partner above a 2. Specifically, 81 participants and 81 confederates reported a score of 1, while the remaining 3 participants and 3 confederates reported a score of 2. Overall, the means for both the participants ($M = 1.04$, $SD = 0.19$) and the confederates ($M = 1.04$, $SD = 0.19$) showed that the two individuals were basically strangers at the beginning of the exercise. For the second question, again, no person rated the relationship above a 2, with both 80 participants and 80 confederates reporting a score of 1, and 4 participants and 4 confederates reporting a score of 2. Again, the means for both the participants ($M = 1.05$, $SD = 0.21$) and confederates ($M = 1.05$, $SD = 0.21$) showed that the two individuals did not have a relationship with each other.

Results

Descriptive statistics

Before running each hypothesis test, we used independent samples t tests to check for significant differences based on gender. We also tested correlations between the dependent variables and participant age and the age difference between the participant and the confederate. No significant differences were found between gender and any of the dependent variables. There were also no significant correlations found between age and any dependent variable, but there was one significant correlation found between the difference in age between the participant and confederate and equality, $r = .25$, $p = .02$. However, after an initial analysis of covariance (ANCOVA), the covariate of age difference was nonsignificant for equality and was thus removed from the model.

Hypothesis tests

Our predictions all hypothesized a group difference between condition (high or low alexithymia) and a perceptual variable, including affect, attraction, and several relational messages. Due to this, all hypotheses were tested with an independent samples t test.

Hypothesis 1

We predicted that confederates would report lower levels of relational messages involving intimacy from alexithymic partners than from nonalexithymics during the interaction. The t test was significant, $t(82) = -2.02$, $p = .02$. Confederates reported fewer relational messages involving intimacy from alexithymics ($M = 4.51$, $SD = 0.80$) than nonalexithymics ($M = 4.86$, $SD = 0.75$). Hypothesis 1 is supported.

Hypothesis 2

We predicted that confederates would report lower levels of relational messages involving composure and higher messages involving formality and task orientation from alexithymic partners than from nonalexithymics during the interaction. The t test for composure was significant, $t(82) = -2.33$, $p = .011$. An examination of the means showed that confederates did report lower levels of composure coming from the alexithymic group ($M = 4.93$, $SD = 1.12$) than the nonalexithymic group ($M = 5.50$, $SD = 1.08$). The t test for formality was also significant, $t(82) = 1.82$, $p = .036$. An examination of the means showed that confederates did report higher levels of formality coming from the alexithymic group ($M = 3.49$, $SD = 0.66$) than the nonalexithymic group ($M = 3.22$, $SD = 0.70$). However, the t test for task orientation was nonsignificant, $t(82) = -1.37$, $p = .09$. Hypothesis 2 is partially supported.

Hypothesis 3

We predicted that confederates would report higher levels of relational messages involving dominance and lower levels of messages involving equality from alexithymic partners

than from nonalexithymics during the interaction. The t test for dominance was significant, $t(82) = 1.70$, $p = .04$. An examination of the means showed that confederates did report higher levels of dominance coming from the alexithymic group ($M = 3.34$, $SD = 0.79$) than the nonalexithymic group ($M = 3.04$, $SD = 0.81$). The resulting t test for equality was also significant, $t(82) = -2.73$, $p < .01$. An examination of the means showed that confederates did report lower levels of equality coming from the alexithymic group ($M = 5.46$, $SD = 0.92$) than the nonalexithymic group ($M = 5.96$, $SD = 0.74$). Hypothesis 3 is supported.

Hypothesis 4a

We predicted that confederates would feel lower levels of SA to alexithymics than to nonalexithymics after the interaction. The test was significant, $t(82) = -2.75$, $p = .003$. Confederates were more socially attracted to participants in the nonalexithymic group ($M = 5.60$, $SD = 1.1$) than to participants in the alexithymic group ($M = 4.98$, $SD = 0.96$). Hypothesis 4a is supported.

Hypothesis 4b

We predicted that confederates would feel lower levels of TA to alexithymics than to nonalexithymics after the interaction. The t test was significant, $t(82) = -1.93$, $p = .03$. An examination of the means showed that confederates showed more TA toward the nonalexithymic participants ($M = 5.53$, $SD = 0.99$) than toward the alexithymic participants ($M = 5.11$, $SD = 1.01$). Hypothesis 4b is supported.

Hypothesis 4c

We predicted that confederates would feel lower levels of PA to alexithymics than to nonalexithymics after the interaction. The t test was significant, $t(82) = -3.10$, $p < .001$. An examination of the means showed that confederates were more physically attracted to the nonalexithymic participants ($M = 5.46$, $SD = 1.07$) than to the alexithymic participants ($M = 4.74$, $SD = 1.06$). Hypothesis 4c is supported.

Research question 1

We wondered whether the relational communication message of intimacy mediated the relation between group membership (alexithymic or nonalexithymic) and SA. To probe this question, we followed Baron and Kenny's (1986) model for assessing mediation. First, the independent variable (IV) must be related to the dependent variable (DV), which has already been shown above. Second, the IV must be related to the mediator, which has also been supported. Third, the mediator must be related to the DV. This was supported, as the relational message of intimacy was positively related to SA, $r(84) = .53$, $p < .001$. Finally, to test the mediation question, we ran a simultaneous regression where SA was the outcome measure, and intimacy and condition were entered in the same level, thus each controlling for the shared variance of the other. Full mediation is demonstrated if the IV is no longer a significant predictor of the DV after controlling for the mediator. Our regression model was significant, explaining 30% of the variance. The relationship between intimacy and SA, after controlling for condition ($\beta = .49$), was still significant. The initial relationship between condition and SA ($\beta = .29$) was reduced ($\beta = .18$) and became nonsignificant when controlling for intimate messages, indicating that the relational messages fully mediated the relation between condition and SA. The regression results are shown in Table 2.

Discussion

The arguments offered in this study began with the premise that human beings need a certain amount of positive social interactions for their overall well-being. Any psychological trait that impairs that goal is therefore worthy of study, and alexithymia represents such a trait. This study proposed that there are relational consequences to alexithymia. Specifically, people high in alexithymia may be less able to build and maintain loving relationships and less likely to have high amounts of positive social interaction, compared to people low in alexithymia. To probe this claim,

Table 2. *Regression model for assessing the mediating influence of intimacy on the relationship between alexithymia and social attraction*

Variable	Zero-order *r*	*F*(2, 81)	*B*	*SE B*	β
Criterion: Social attraction ($R^2 = .30$)		18.81***			
Condition[a]	.29		.39	.20	.18
Intimacy	.53		.66	.13	.49***

[a]Condition was dummy coded for this regression with 0 = *high alexithymia condition* and 1 = *low alexithymia condition*.
*** $p < .001$.

the current experiment had people high and low in alexithymia engaged in a 10-min initial interaction with a confederate of the opposite gender. We found that confederates were more attracted to nonalexithymic participants than to alexithymic participants in terms of PA, SA, and TA. Confederates also perceived a host of relational messages differently from nonalexithymic participants than from alexithymic ones. Importantly, the link between alexithymia and SA was fully mediated by the relational message of intimacy, lending further credence to our argument that alexithymia causes a communication deficit, which thus causes the relational difficulties.

Overall, these findings show that confederates perceived that alexithymic individuals were behaving in less positive and socially desirable ways than nonalexithymic individuals during the interaction, whether by verbal or nonverbal behavior (or both). The findings also show higher potential for a continued relationship for the nonalexithymic individuals due to the higher scores for both SA and TA. This supports the contention that alexithymics have a difficult time building and maintaining close relationships. It must be noted, however, that all significant findings came with a relatively small effect size. This precludes sweeping claims of importance and suggests that more research is needed to understand the importance of alexithymia to relational development. However, the hypotheses were largely supported, with consistency both in significance and in effect sizes. In addition, it is possible that the smaller findings were due to our sample, which was composed of healthy college students who were not severely alexithymic. A sample that included numerous individuals scoring on the extremes of alexithymia, both high and low, could potentially discover much larger differences.

Implications

Numerous scholars have posited that humans need a minimum number of close relationships and positive social interactions to achieve a truly well and healthy life (Baumeister & Leary, 1995; Schutz, 1958). Individuals should thus be rewarded when attending to those goals and experience consequences when they fail at achieving them. Indeed, individuals will then pursue avenues that they believe will help them in the pursuit of those goals and should theoretically hesitate to continue down a path that would not help. If an individual has a negative initial interaction with another person, he or she will be more likely to end that relationship at that time than if he or she has a positive initial interaction. This prediction aligns with current theories of communication competence (Pavitt & Haight, 1985; Spitzberg & Cupach, 1987), which state that we are more likely to succeed in relationships if we are skilled communicators. However, while those theories state that communication competence is mainly the result of learned behavior (e.g., picturing an individual with perfect behavior and modeling one's behavior after him or her), this study points to the possibility that for some people, there is both a "floor" and a "ceiling" in terms of how competent one can become. For instance, the component model of communication competence

states that competence comes through three components: knowledge, skill, and motivation (Spitzberg & Cupach, 1987). A psychological trait such as alexithymia, which impairs the ability to process, communicate, or understand emotions, could limit the ability of an individual to learn the knowledge or skills necessary for proper communication competence. This then affects the person's baseline (or lower limit) level of competence as well as creating a ceiling effect for how competent a communicator the individual can become. It is not enough to simply say that this ceiling effect occurs through acquired skills or through a learning disability. What this study could potentially add to the model of communication competence is the notion that some limitations are inherent, based on our mental and physical capabilities rather than our learning. Over the past decade there has been a burgeoning literature on the interaction between communication behavior and the body (for a review, see Beatty, McCroskey, & Floyd, 2009). One of the underlying themes of this research is that not everything about communication is learned through socialization or enculturation. Thus, the communication competence model could be more powerful by taking this notion into consideration as an initial predictor of communication behaviors, understanding that some aspects of ceiling effects are biological due to traits such as alexithymia (but also including traits such as autism, AS, and attachment).

The very nature of the question surrounding this study leads into the area of application. If an emotional deficit condition like alexithymia impairs the ability of an individual to build successful relationships by inhibiting the ability to engage in positive social interactions, how can service providers help those individuals who are poor in emotional competence? One possible avenue would be, instead of attempting to treat alexithymia, to help alexithymic individuals become more competent communicators. To do this we would first need to understand where exactly the deficits manifest themselves in a conversation. Is it through a lack of verbal language regarding emotions? Is it through a lack of nonverbal communication, including behaviors such as smiling, which has been linked to PA (Reis et al., 1990)? This is where this study helps to extend the literature in working toward this goal, as we now can say that even strangers can perceive differences in relational messages after a short conversation between individuals high and low in emotional competence.

This study suggests several directions for future research. First, future research will need to attend to the methodological limitations of this study, including working to include individuals who score extremely high on alexithymia and controlling the types of topics discussed to attempt to elicit more emotional communication. Second, future research will need to examine whether these findings replicate across dyad types, including friendships, romantic partners, or between family members. Future research will also want to look for replication across conditions of emotional impairment. As discussed previously, these findings become more consequential if they can be extended to help other psychological conditions, including autism, PTSD, or even anxiety problems. As future research identifies the other conditions that replicate the current findings, this information can be used to target specific types of lessons and learning that could be instituted for people in schools or given to parents in the home. At this point it would be far too premature to actually delineate what that information would be, but based on our findings it does appear that by helping individuals low in emotional competence better communicate relational messages of intimacy, the ability to attract other people socially might well be improved, leading to a greater number of positive relationships in that individual's life.

Conclusions

This study employed a strong theoretical foundation, drawing from a wealth of previous research on both the importance of relational development and the psychological and physiological consequences of alexithymia. The experiment allowed for the opportunity to assess the real-time relational effects of alexithymia, which begins to fill a hole in current

alexithymia research. The sample itself, while resulting in significantly different scores on alexithymia between groups, was relatively homogenous in terms of age, education level, ethnicity, and overall health, limiting our ability to generalize from the findings. Indeed, while the prescreening process was rigorous in selecting qualified participants, it still left open the possibility of individuals incorrectly self-reporting on aspects of their emotional competence by basing participant qualification on one self-report of the TAS–20. Future studies should endeavor to recruit a sample with far greater variance on said demographic points, allowing for greater external validity. Future studies should also sample prospective participants on the TAS–20 multiple times to properly account for any regression to the mean that occurs on the self-report. Our design also did not allow us to examine to what extent our confederates truly raised the level of emotional communication in their conversations with the participants. It would be interesting in a future study to have confederates initially talk with the participant with no additional instructions, then split them up and inform the confederates to increase emotionality at that time, and then have a second conversation between the participant and confederate. That would allow us to see whether some of these deficits are heightened as emotionality in the conversation is heightened. Finally, we do not know which of the emotional deficit pathways are implicated in the observed behavioral differences (e.g., working memory, emotional language, nonverbal communication). This question should be further answered before the development of interventions to address the social deficit.

This study can lead to several fruitful directions for research. First, it is important to see how alexithymia affects established relationships instead of interactions between strangers. Indeed, the current findings could lead to a host of questions involving how alexithymia (or any psychological trait that limits communication competence) affects the growth and maintenance of relationships. Examples of these questions could involve the ability to engage in competence conflicts with relational partners, or engage in social support behaviors, or even begin to form a romantic attachment. Finally, as previously discussed, it is important to examine connections between this research and other psychological traits that involve emotional competence, thus developing interventions that could potentially help individuals diagnosed with a wide variety of psychological conditions.

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